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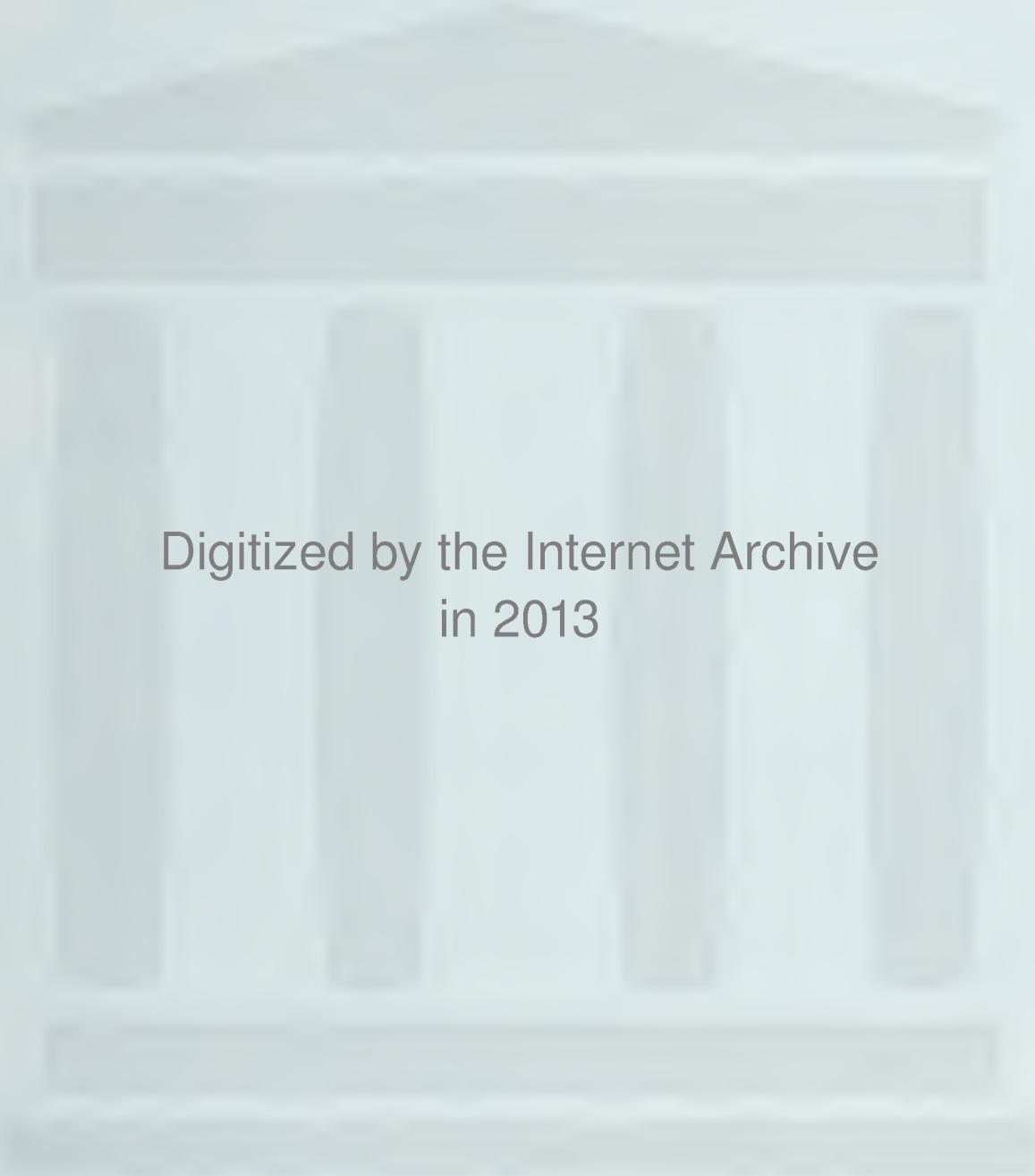
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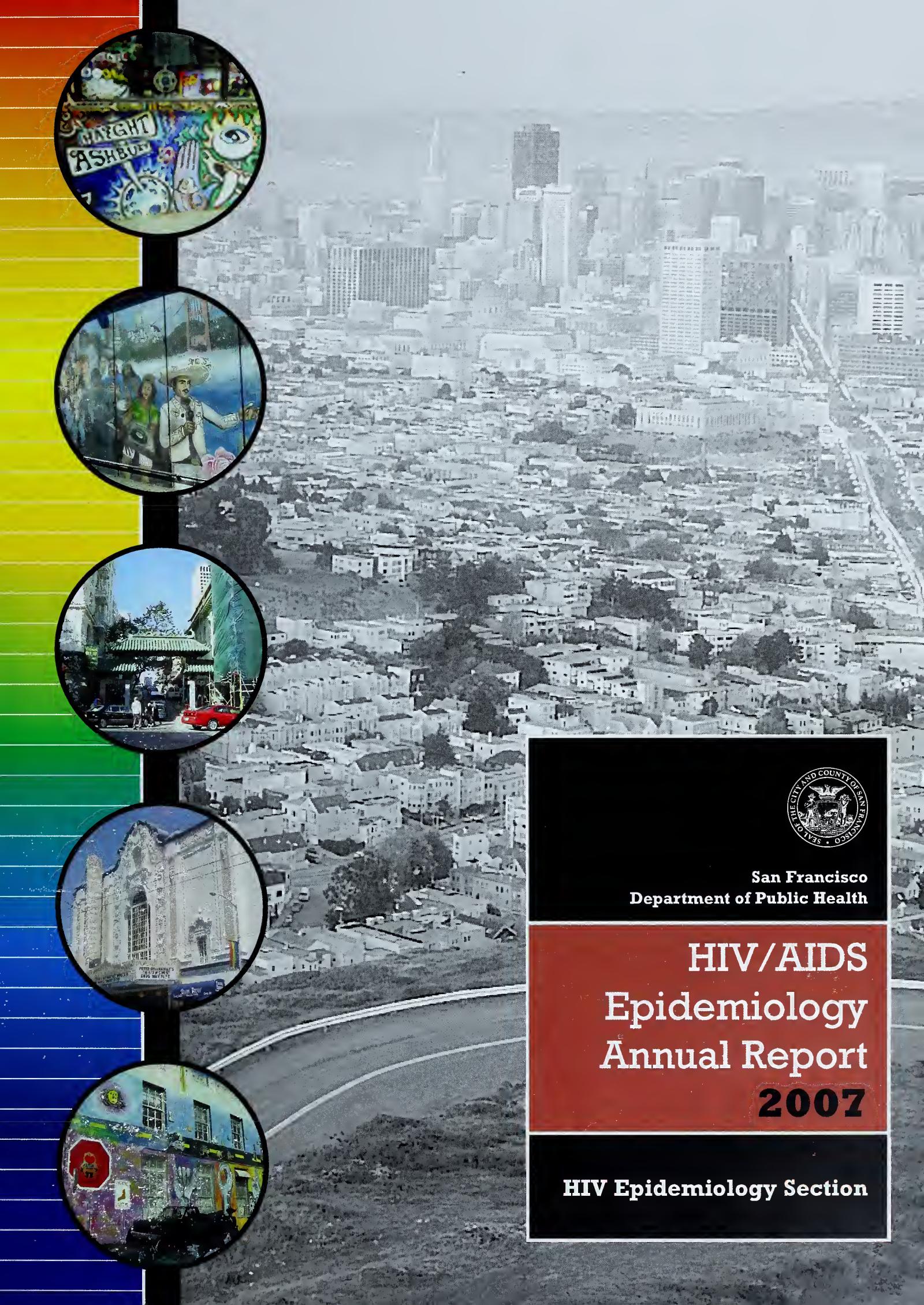
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San Francisco
Department of Public Health

**HIV/AIDS
Epidemiology
Annual Report
2007**

HIV Epidemiology Section

HIV/AIDS Epidemiology Annual Report

2007

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Department of Public Health



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Acknowledgments

This report was prepared by the HIV Epidemiology Section staff. We wish to thank the San Francisco Sexually Transmitted Disease Prevention and Control Services, the San Francisco Stop AIDS Project, and the Pediatric Spectrum of Disease Project for providing data in this report.

In addition, we wish to acknowledge the contribution of persons with HIV/AIDS, HIV/AIDS health care providers, community groups, researchers, and members of the community. Publication of this report would not have been possible without their cooperation, dedication, and hard work.

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Executive Summary

Homelessness among persons with HIV/AIDS has been an ongoing problem in San Francisco. Housing status at time of diagnosis has been collected on all persons reported with AIDS since 1990 and among persons reported with HIV since 2002, the year that HIV case reporting took effect. Because HIV reporting is relatively new, reliable trends in homelessness can only be examined for persons reported with AIDS. The proportion of homeless persons with AIDS has been relatively stable at approximately 10% per year.

Homeless persons suffer from high rates of substance abuse, mental illness, tuberculosis, infectious hepatitis, and insufficient health care. Among HIV-infected persons, unstable housing has been associated with poor utilization of health care services including greater reliance on emergency departments, more frequent hospitalizations, and fewer ambulatory care visits. Use of antiretroviral therapy and prophylaxis against opportunistic illnesses is less frequent among the homeless. Among homeless persons, prescribed antiretroviral therapy and adherence to these medications is suboptimal.

Although there have been a few studies of the effect that homelessness has on AIDS survival, none have examined the effect of homelessness on AIDS survival in a representative sample of persons with AIDS during the time that highly effective antiretroviral therapy has been widely available. We analyzed AIDS surveillance data and found that survival was significantly worse for homeless persons. After taking into account those factors that are known to affect AIDS survival (such as age and use of antiretroviral therapy), homelessness increased the risk of death by more than 20%. Other data for homeless persons with HIV/AIDS are summarized in Section 15 of this annual report.

Our findings of worse survival for homeless persons with AIDS add yet another health disadvantage to homeless persons. In response to the needs of chronically and seriously ill homeless persons, the San Francisco Department of Public Health (SFDPH) offers supportive housing services through the Direct Access to Housing (DAH) program. The DAH takes people directly from shelters, streets or institutions and places them in permanent supportive housing. Most of the housing sites require rent payment by residents of 30% to 50% of their income (on a sliding scale). All DAH sites have dedicated case managers. The medical services provided by the DAH sites range from having an on-site full-time nurse and part-time mid-level clinician (e.g. nurse practitioner) to having the case manager facilitate care through off-site clinicians at designated health care facilities.

Providing such services to homeless persons is an important intervention for persons with AIDS. Providing housing to persons with AIDS is likely to result in more appropriate use of health care services, better adherence to medications, and reduction in HIV risk behaviors. Thus, these housing services benefit individuals beyond those who are homeless. Provision of supportive housing to persons with serious illnesses is an important function of the public health department.

1

Overview of HIV/AIDS in San Francisco

HIV/AIDS surveillance in San Francisco is conducted through various methods and evaluated on a regular basis (see Technical Notes, HIV/AIDS Surveillance Methods). From the beginning of the epidemic to December 31, 2007, a cumulative total of 27,592 San Francisco residents were diagnosed with AIDS (Table 1.1). This comprises 19% of California AIDS cases and three percent of cases reported nationally. As of December 2006, San Francisco was ranked third in the cumulative number of AIDS cases among metropolitan areas nationwide, while San Francisco's AIDS incidence rate in 2006 ranked 12th. Compared to cases reported in California and the United States as a whole, AIDS cases in San Francisco are more likely to be male, white, and to occur among men who have sex with men (MSM), including MSM who also inject drugs intravenously (MSM IDU).

Table 1.1 Characteristics of cumulative AIDS cases in San Francisco, California, and the United States[#]

	San Francisco (N = 27,592)		California (N = 147,821)	United States (N = 992,865)
	Number	%	%	%
Gender				
Male	26,094	95%	91%	80%
Female	1,122	4%	9%	20%
Transgender*	376	1%	<1%	--
Race/Ethnicity				
White	19,811	72%	56%	39%
African American	3,518	13%	18%	40%
Latino	3,213	12%	23%	19%
Asian/Pacific Islander	876	3%	2%	<1%
Native American	146	<1%	<1%	<1%
Other/Unknown	28	<1%	<1%	<1%
Exposure Category				
MSM	20,567	75%	67%	44%
IDU	2,113	8%	10%	23%
MSM IDU	4,087	15%	9%	7%
Heterosexual	401	1%	6%	13%
Transfusion/Hemophilia	167	<1%	2%	2%
Other/Unidentified	257	<1%	6%	11%

San Francisco data are reported through March 14, 2008 for cases diagnosed through December 2007; California data are reported through December 2007. U.S. data are reported through December 2006 and may be found in the CDC HIV/AIDS Surveillance Report, 2006, Vol. 18.

* Transgender data are not reported by the United States. See Technical Notes "Transgender Status."

For San Francisco AIDS cases, the distribution of HIV exposure categories differs by race/ethnicity and gender. Among men, MSM account for the majority of male AIDS cases within all race/ethnic groups (Table 1.2). In African American men, heterosexual injection drug use is the second leading exposure category, but for men of all other race/ethnic groups, MSM IDU represents the second most frequent exposure category. Cumulatively, less than 2 percent of men with AIDS acquired HIV infection through heterosexual contact, transfusion of blood or blood products, or other exposure categories.

Among women with AIDS, the most frequent exposure category for whites, African Americans, Latinas, and Native Americans is injection drug use (IDU) followed by heterosexual contact. For Asian/Pacific Islander women, 41% acquired their infection through heterosexual contact, 33% through injection drug use, and 17% through transfusion of blood or blood products.

Injection drug use is prevalent among male to female transgender AIDS cases. Fifty-eight percent of whites, 67% of African Americans, and 45% of Latinos were IDU.

Table 1.2 Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2007, San Francisco

	White Number (%)	African American Number (%)	Latino Number (%)	Asian/Pacific Islander Number (%)	Native American Number (%)
Male					
MSM	15,853 (82)	1,506 (52)	2,309 (78)	651 (84)	67 (52)
IDU	509 (3)	679 (24)	164 (6)	24 (3)	10 (8)
MSM IDU	2,829 (15)	576 (20)	369 (13)	58 (7)	48 (37)
Heterosexual	31 (<1)	48 (2)	26 (<1)	9 (1)	2 (2)
Transfusion/ Hemophilia	51 (<1)	17 (<1)	22 (<1)	14 (2)	0 (0)
Other/Unidentified	60 (<1)	54 (2)	59 (2)	22 (3)	2 (2)
Male Subtotal	19,333	2,880	2,949	778	129
Female					
IDU	241 (65)	372 (72)	71 (47)	22 (33)	11 (85)
Heterosexual	82 (22)	110 (21)	60 (39)	27 (41)	2 (15)
Transfusion/ Hemophilia	29 (8)	13 (3)	10 (7)	11 (17)	0 (0)
Other/Unidentified	17 (5)	24 (5)	11 (7)	6 (9)	0 (0)
Female Subtotal	369	519	152	66	13
Transgender* (Male to Female Only)					
IDU	63 (58)	80 (67)	50 (45)	11 (39)	#
Non IDU	45 (42)	39 (33)	61 (55)	21 (61)	#
Transgender Subtotal	108	119	111	32	#

* See Technical Notes "Transgender Status."

Data are not released due to potential small population size.

The number of new AIDS cases diagnosed each year among San Francisco residents reached a peak in 1992 and has declined since then (Figure 1.1). Deaths among persons with AIDS reached a plateau between 1992 and 1995 and declined thereafter. The sharpest decline in AIDS deaths occurred between 1995 and 1997, reflecting the impact of combination antiretroviral therapies. The number of AIDS deaths per year has been fairly level between 2001 and 2005. Delays in reporting affect the number of cases and deaths for recent years. Therefore, the numbers of cases and deaths for 2006 and 2007 may be revised upward in future reports. By the end of 2007, there were 8,980 San Francisco residents living with AIDS.

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2007, San Francisco

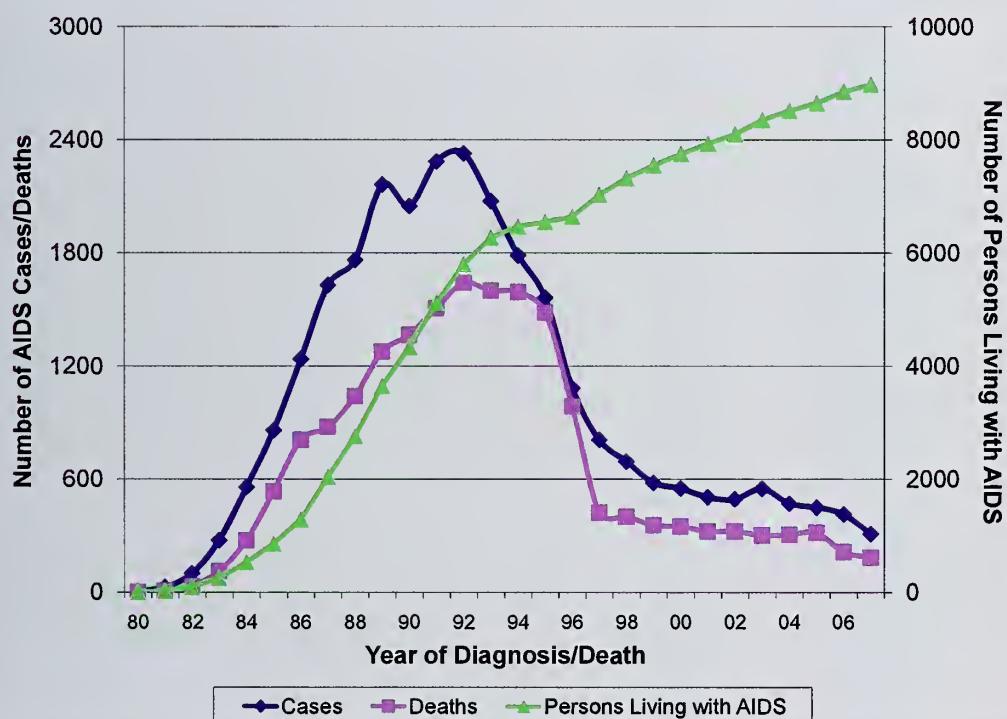


Table 1.3 shows the number and characteristics of cases whose initial HIV diagnosis occurred between 2003 and 2007. Initial date of HIV diagnosis was determined based on the earliest date of HIV antibody test, viral load or CD4 test, antiretroviral treatment start date, or patient self report of a positive HIV test. The number includes both code-based and name-based HIV cases reported to the San Francisco Department of Public Health, and does not include HIV-infected persons who are not aware of their infection or cases not yet reported. In addition, the data include persons who were initially diagnosed with HIV and had a later diagnosis of AIDS and those diagnosed with HIV and AIDS at the same time.

The number of persons newly diagnosed with HIV declined between 2003 and 2007. However, the lower numbers in recent years may also reflect delays in reporting of persons recently diagnosed with HIV. Overall, the characteristics of persons newly diagnosed with HIV remained relatively stable with the majority of cases being male, white, aged 25-49 years, and MSM.

Table 1.3 Characteristics of persons newly diagnosed with HIV between 2003 and 2007, San Francisco

	Year of Initial HIV Diagnosis					2008
	2003	2004	2005	2006	2007	
Total number*	839	803	651	500	467	
Gender						
Male	89%	91%	89%	92%	89%	
Female	8%	7%	9%	6%	8%	
Transgender	3%	2%	2%	2%	3%	
Race/Ethnicity						
White	52%	56%	52%	58%	54%	
African American	18%	14%	18%	14%	15%	
Latino	18%	18%	19%	19%	20%	
Asian/Pacific Islander	7%	7%	6%	7%	7%	
Native American	1%	1%	1%	1%	0%	
Other/Unknown	3%	3%	5%	1%	3%	
Age at HIV Diagnosis (Years)						
0 - 12	<1%	<1%	<1%	0%	0%	
13 - 24	8%	9%	9%	10%	11%	
25 - 49	81%	79%	81%	75%	78%	
50+	11%	12%	10%	15%	11%	
Exposure Category						
MSM	63%	71%	66%	71%	71%	
IDU	11%	10%	8%	7%	9%	
MSM IDU	12%	10%	11%	10%	7%	
Heterosexual	3%	3%	6%	4%	7%	
Other/Unidentified	10%	6%	9%	7%	5%	

* Includes persons with a diagnosis of HIV (non-AIDS), an initial diagnosis of HIV (non-AIDS) and a later diagnosis of AIDS, or concurrent diagnosis of HIV and AIDS.

The characteristics of living HIV/AIDS cases in San Francisco differ considerably when compared to statewide and nationwide data. Similar to the demographic distribution of San Francisco AIDS cases, persons living with HIV in San Francisco are more likely to be male, white, and MSM (Table 1.4). There are a larger proportion of persons living with HIV/AIDS in California and in the United States that are female, African Americans and Latinos. Heterosexual contact and IDU non-MSM are also more common among California and U.S. cases than San Francisco cases.

Table 1.4 Characteristics of Persons Living with HIV/AIDS in San Francisco, California, and the United States, December 2007

	San Francisco		California		United States ³
	Living HIV Non-AIDS Case ¹	Living HIV/AIDS Cases	Living HIV Non-AIDS Cases ²	Living HIV/AIDS Cases	Living HIV/AIDS Cases
Total Number	6,490	15,470	23,760	87,049	491,727
Gender					
Male	91%	92%	85%	87%	72%
Female	6%	6%	14%	12%	27%
Transgender	2%	2%	1%	1%	--
Race/Ethnicity					
White	63%	64%	49%	48%	34%
African American	14%	14%	18%	19%	47%
Latino	14%	15%	28%	29%	17%
Asian/Pacific Islander &					
Native American	5%	6%	4%	4%	1%
Other/Unknown	3%	1%	1%	<1%	1%
Exposure Category					
MSM	73%	73%	67%	65%	44%
IDU	7%	8%	7%	10%	19%
MSM IDU	10%	12%	7%	8%	5%
Heterosexual	3%	3%	10%	9%	29%
Other/Unidentified	7%	4%	9%	8%	3%

1. San Francisco HIV non-AIDS cases include both the name-based and code-based HIV cases.

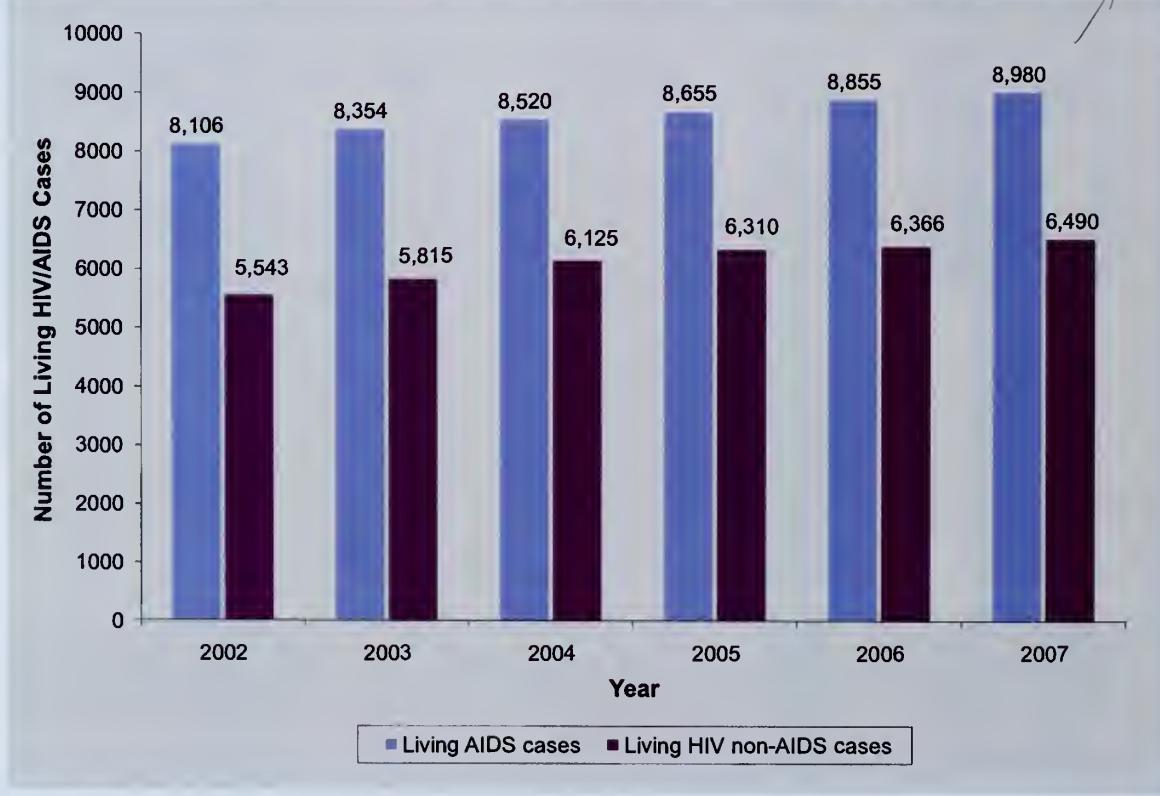
2. California HIV non-AIDS cases include only the name-based HIV cases.

3. U.S. data are through December 2006 and are estimates by the CDC that reflect adjustments in reported case counts.

The number of persons living with HIV/AIDS who were reported to the San Francisco Department of Public Health increased from 13,649 in 2002 to 15,470 in 2007 (Figure 1.2). The number includes AIDS cases, and both code-based and name-based HIV cases. The “2006 HIV Consensus Estimates” projected 18,735 persons living with HIV/AIDS in San Francisco on January 1, 2006 (see HIV/AIDS Epidemiology Annual Report 2005).

The gap between the consensus estimate and the case reporting data indicates that a good proportion of persons with HIV are not aware of their infection or not receiving routine medical care. In addition, reporting of HIV cases is incomplete, especially for those diagnosed in earlier years. Also, surveillance case report data only includes persons diagnosed with HIV/AIDS who are residents of San Francisco at the time of their diagnosis. Persons who are residents of other counties and receive medical care in San Francisco are not included in the case counts.

Figure 1.2 HIV/AIDS prevalence, 2002-2007, San Francisco



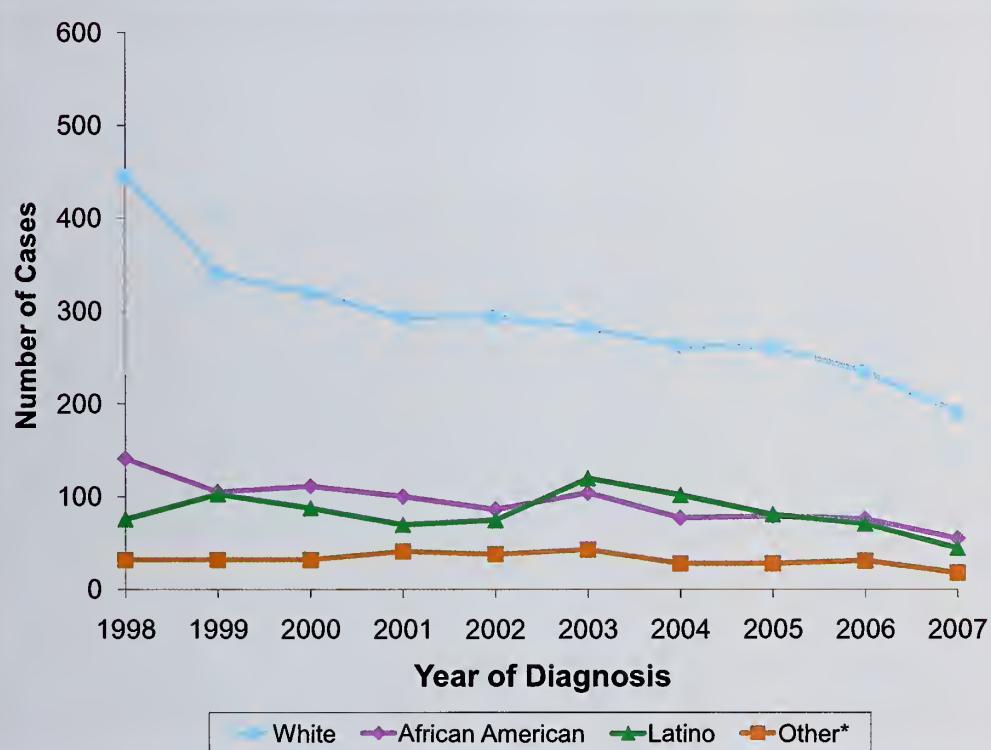
Trends in AIDS Incidence

dia diagnosis

Race/ethnicity

In absolute numbers, AIDS cases in San Francisco have occurred predominantly among whites (Figure 2.1). The number of white AIDS cases has declined over the last 10 years. The number of African American AIDS cases has also declined since 1998, but has been level between 2004 and 2006. The trend for Latino AIDS cases shows periods of slight increase until 2003 and decline thereafter. The proportion of Latino AIDS cases decreased from 22% in 2003 to 15% in 2007. AIDS case counts for recent years are subject to delays in reporting, particularly for 2006 and 2007.

Figure 2.1 Number of AIDS cases by race/ethnicity, 1998-2007, San Francisco

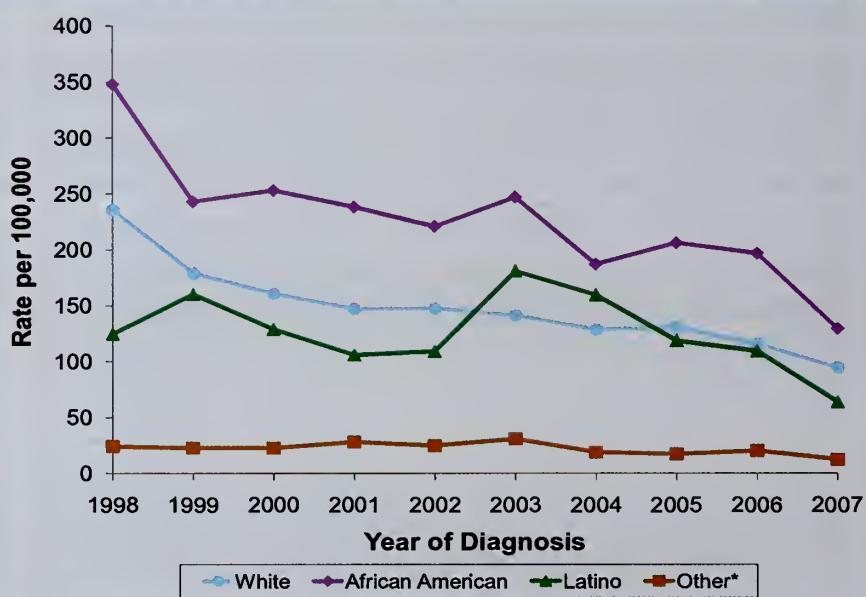


* Cases in the "Other" race/ethnicity category include 82% Asian/Pacific Islanders and 12% Native Americans.

Since 1998, the AIDS incidence rates among African American men have been higher than for men of all other race/ethnic groups (Figure 2.2). AIDS incidence rates for African Americans declined from 1998 to 2004, and from 2004 to 2006 they have been level. The AIDS incidence rate for Latino men increased in 2003 to 181 per 100,000 population and has declined since then. In 2007, the incidence rate of AIDS per 100,000 population was 129 among African American men, 95 for white men, and 64 for Latino men. Delays in reporting result in under-estimation of rates for recent years, particularly for 2006 and 2007.

AIDS incidence rates among women are much lower than that among men. Throughout the epidemic, African American women have been disproportionately affected by AIDS compared to women of other race/ethnic groups. Although the AIDS incidence rates for African American women have declined since 1998, they have been level in recent years (Figure 2.3). In 2007, the incidence rate of AIDS per 100,000 population was 44 for African American women, 10 for Latina women, 2 for white women, and 1 for women of other race/ethnic groups.

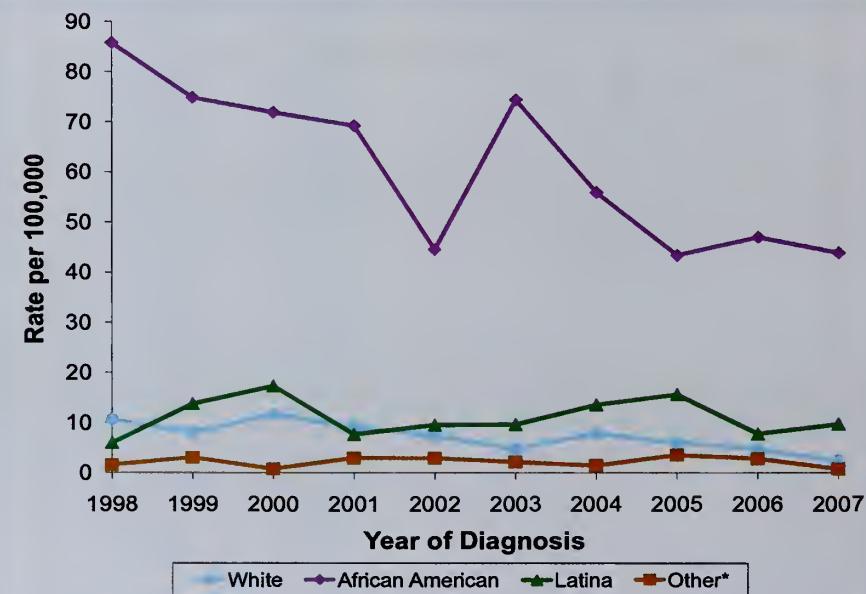
Figure 2.2 Male annual AIDS incidence rates[#] per 100,000 population by race/ethnicity, 1998-2007, San Francisco



See Technical Notes "AIDS Incidence Rates."

* Cases in the "Other" race/ethnicity category include 82% Asian/Pacific Islanders and 12% Native Americans.

Figure 2.3 Female annual AIDS incidence rates[#] per 100,000 population by race/ethnicity, 1998-2007, San Francisco



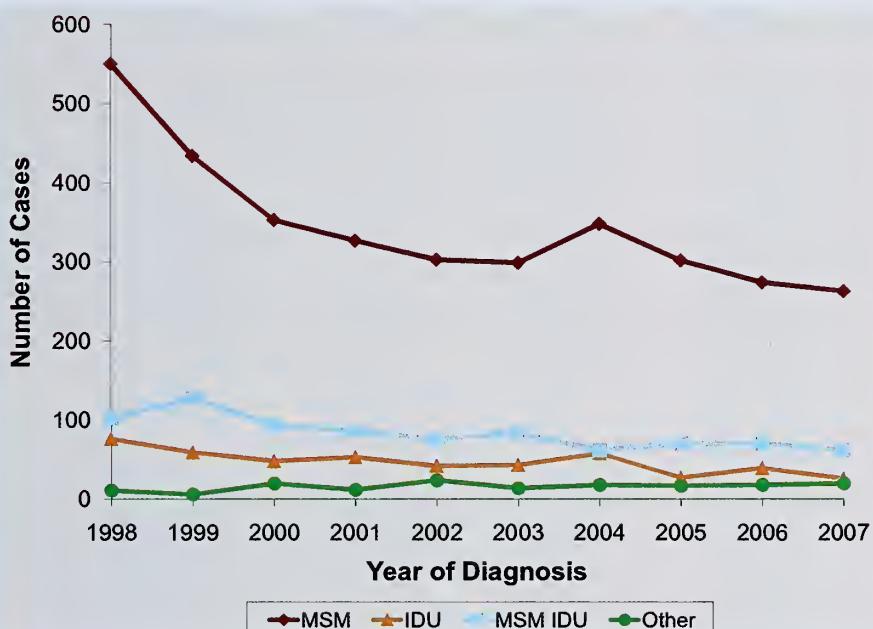
See Technical Notes "AIDS Incidence Rates."

* Cases in the "Other" race/ethnicity category include 83% Asian/Pacific Islanders and 10% Native Americans.

Exposure category

Most of the male AIDS cases in San Francisco have occurred among MSM. The number of cases among MSM has decreased between 1998 and 2007 (Figure 2.4). In 2007, 70% of male AIDS cases were MSM, 15% were MSM IDU, and 9% were heterosexual IDU.

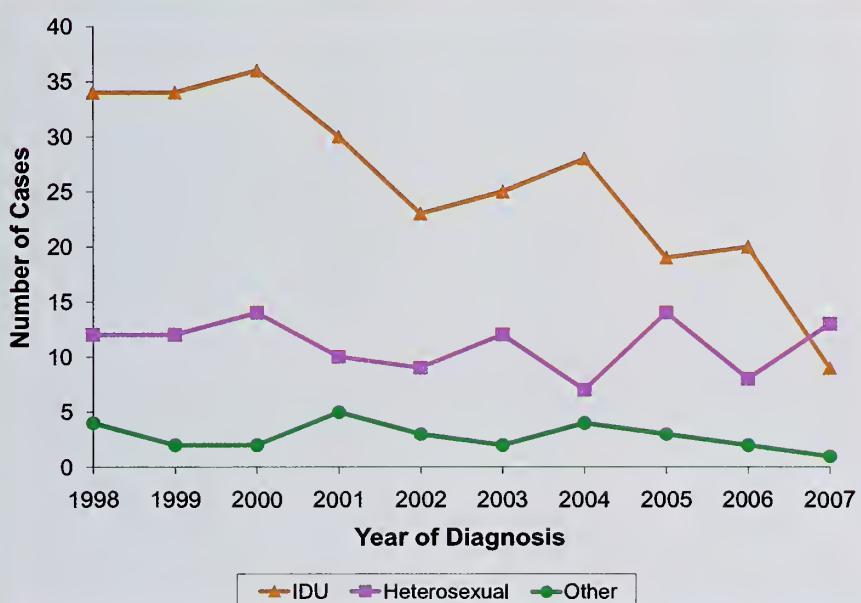
Figure 2.4 Number of male AIDS cases* by exposure category, 1998-2007, San Francisco



* Excludes male-to-female transgender AIDS cases.

Injection drug use is the predominant exposure category of female AIDS cases, followed by heterosexual contact. The number of female IDU cases has declined since 1998, while female AIDS cases due to heterosexual contact and other exposure categories have remained stable. In 2007, 57% of female AIDS cases were attributed to heterosexual contact and 39% were due to injection drug use. Nationwide, heterosexual contact was the predominant exposure category for female AIDS cases in 2006.

Figure 2.5 Number of female AIDS cases* by exposure category, 1998-2007, San Francisco



* Excludes female-to-male transgender AIDS cases.

Age

Cumulatively, the largest number of men, women, and transgender persons with AIDS were diagnosed between ages 30 and 39 years (Table 2.1). Younger persons (under the age of 30) made up a larger proportion of female and transgender AIDS cases than male AIDS cases. For cases diagnosed in 2004-2007, there was an increase in the proportion of women diagnosed with AIDS in the 50+ years age group, as well as the proportion of men in the over 40 years age groups. This likely reflects the use of effective drug therapies which extended the time between HIV infection and the time AIDS developed.

Table 2.1 AIDS cases by gender and age at diagnosis, diagnosed 1997-2007, San Francisco

	1997-1999		2000-2003		2004-2007		Cumulative Totals	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in Years)								
0 - 19	2	(<1)	5	(<1)	2	(<1)	46	(<1)
20 - 29	181	(10)	153	(8)	126	(9)	2,919	(11)
30 - 39	802	(43)	738	(40)	478	(33)	11,761	(45)
40 - 49	631	(34)	633	(34)	547	(37)	8,239	(32)
50+	264	(14)	320	(17)	311	(21)	3,129	(12)
Male Subtotal	1,880	(100)	1,849	(100)	1,464	(100)	26,094	(100)
Female (Age in Years)								
0 - 19	2	(1)	3	(2)	0	(0)	23	(2)
20 - 29	17	(12)	25	(15)	14	(11)	158	(14)
30 - 39	59	(40)	54	(32)	35	(27)	433	(39)
40 - 49	53	(36)	63	(37)	44	(34)	340	(30)
50+	16	(11)	26	(15)	35	(27)	168	(15)
Female Subtotal	147	(100)	171	(100)	128	(100)	1,122	(100)
Transgender (Age in Years)								
13 - 29	16	(29)	10	(13)	9	(18)	92	(25)
30 - 39	21	(38)	34	(45)	19	(38)	166	(44)
40+	18	(33)	32	(42)	22	(44)	116	(31)
Transgender Subtotal	55	(100)	76	(100)	50	(100)	374	(100)

3

Persons Living with HIV/AIDS

The number of persons living with HIV/AIDS increased due to ongoing incidence of HIV combined with increase in survival after AIDS. Persons were counted as living in a year if their HIV diagnosis date was in or before that year and they were known to be alive at the end of the year. As of December 31, 2007, 15,470 San Francisco residents were living with HIV/AIDS (Table 3.1). Demographic and risk characteristics of persons living with HIV/AIDS remained mostly stable between 2003 and 2007; most are white, age 40-49 years, and MSM (including MSM IDU). Age 50+ was the fastest growing age category of persons living with HIV/AIDS, rising from 27% to 37% between 2003 and 2007. This increase may indicate that use of antiretroviral treatments is allowing persons with HIV/AIDS to live longer.

Table 3.1 Trends in persons living with HIV/AIDS by demographic and risk characteristics, 2003-2007[#], San Francisco

	2003	2004	2005	2006	2007			
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Gender								
Male	13,018	(92)	13,457	(92)	13,734	(92)	13,996	(92)
Female	834	(6)	866	(6)	897	(6)	901	(6)
Transgender	317	(2)	322	(2)	325	(2)	324	(2)
Race/Ethnicity								
White	9,301	(66)	9,549	(65)	9,688	(65)	9,829	(65)
African American	2,081	(15)	2,121	(14)	2,145	(14)	2,166	(14)
Latino	1,959	(14)	2,067	(14)	2,155	(14)	2,225	(15)
Asian/Pacific Islander	597	(4)	648	(4)	672	(4)	695	(5)
Native American	93	(<1)	98	(1)	104	(1)	107	(<1)
Other/Unknown	138	(<1)	162	(1)	192	(1)	199	(1)
Age in Years (at end of each year)								
0 - 19	45	(<1)	43	(<1)	36	(<1)	30	(<1)
20 - 29	580	(4)	628	(4)	643	(4)	619	(4)
30 - 39	3,815	(27)	3,548	(24)	3,242	(22)	2,992	(20)
40 - 49	5,857	(41)	6,084	(42)	6,255	(42)	6,303	(41)
50+	3,872	(27)	4,342	(30)	4,780	(32)	5,277	(35)
Exposure Category								
MSM	10,177	(72)	10,577	(72)	10,829	(72)	11,060	(73)
IDU	1,288	(9)	1,294	(9)	1,276	(9)	1,269	(8)
MSM IDU	1,949	(14)	1,953	(13)	1,948	(13)	1,942	(13)
Heterosexual	309	(2)	331	(2)	364	(2)	382	(3)
Transfusion/Hemophilia	38	(<1)	37	(<1)	37	(<1)	37	(<1)
Other/Unknown	408	(3)	453	(3)	502	(3)	531	(4)
Total	14,169		14,645		14,956		15,221	
								15,470

Persons living with HIV/AIDS at the end of each year.

As of December 31, 2007, a total of 8,980 persons were living with AIDS in San Francisco (Table 3.2). Ninety-two percent were male, 6% were female, and 2% were transgender. Of males, 68% were white, and MSM made up the majority of living male AIDS cases within all race/ethnic groups. Persons age 50 and greater made up a larger proportion of white and African American men than men of other race/ethnic groups.

Among women living with AIDS, African American was the largest race/ethnic group (45%) followed by white (30%). The most frequent exposure categories for living female AIDS cases were injection drug use and heterosexual contact. Similar to living male AIDS cases, the majority of living female AIDS cases was ages 25-49 years.

Table 3.2 Persons living with AIDS by gender, exposure category, age and race/ethnicity, December 2007, San Francisco

	White Number	African American Number	Latino Number	Asian/Pacific Islander & Native American Number	Total Number*
Male					
<i>Exposure Category</i>					
MSM	4,602 (82)	499 (51)	1,006 (81)	325 (79)	6,441
IDU	188 (3)	224 (23)	48 (4)	18 (4)	480
MSM IDU	808 (14)	187 (19)	137 (11)	43 (11)	1,179
Heterosexual	14 (<1)	28 (3)	19 (2)	6 (1)	68
Other	5 (<1)	5 (<1)	4 (<1)	6 (1)	21
No reported risk	29 (<1)	26 (3)	27 (2)	11 (3)	93
<i>Age in Years (at end of 2007)</i>					
<13	0 (0)	0 (0)	1 (<1)	0 (0)	2
13 - 24	4 (<1)	4 (<1)	9 (<1)	5 (1)	22
25 - 49	2,890 (51)	499 (51)	866 (70)	262 (64)	4,530
50+	2,752 (49)	466 (48)	365 (29)	142 (35)	3,728
Male Subtotal	5,646	969	1,241	409	8,282
Female					
<i>Exposure Category</i>					
IDU	100 (66)	156 (69)	34 (40)	11 (27)	302
Heterosexual	41 (27)	57 (25)	39 (46)	22 (54)	159
Other	5 (3)	4 (2)	6 (7)	4 (10)	19
No reported risk	6 (4)	8 (4)	5 (6)	4 (10)	24
<i>Age in Years (at end of 2007)</i>					
<13	0 (0)	0 (0)	1 (<1)	0 (0)	1
13 - 24	0 (0)	4 (2)	3 (4)	1 (2)	8
25 - 49	96 (63)	120 (53)	51 (61)	29 (71)	298
50+	56 (37)	101 (45)	29 (35)	11 (27)	197
Female Subtotal	152	225	84	41	504
Transgender	48	61	61	24	194
Total	5,846	1,255	1,386	474	8,980

* Includes persons with multiple race or whose race/ethnicity information is not available.

As of December 31, 2007, 6,490 living HIV non-AIDS cases had been reported in San Francisco (Table 3.3). Demographics and risk categories for living HIV non-AIDS cases were similar to living AIDS cases. Ninety-two percent were male, 6% were female, and 2% were transgender. The majority of living male HIV non-AIDS cases was white and MSM. The majority of living female HIV non-AIDS cases was African American and injection drug users. The most frequent age category for living HIV non-AIDS cases was 25-49 years old. By race/ethnic group, African Americans had the highest proportion of living HIV non-AIDS cases in the age 50+ group.

There are larger proportions of living HIV non-AIDS cases reported without risk information compared to living AIDS cases. This is partly due to the non-name code-based HIV reporting system used to report HIV non-AIDS cases until April 17, 2006. This former reporting system resulted in the inability to follow up and obtain complete case information. Risk information is expected to be more complete as the name-based HIV reporting system becomes more mature.

Table 3.3 Persons living with HIV non-AIDS by gender, exposure category, age and race/ethnicity, December 2007, San Francisco

	White Number (%)	African American Number (%)	Latino Number (%)	Asian/Pacific Islander & Native American Number (%)	Total Number*
Male					
<i>Exposure Category</i>					
MSM	3,264 (83)	381 (55)	696 (84)	253 (83)	4,670
IDU	134 (3)	118 (17)	21 (3)	12 (4)	287
MSM IDU	417 (11)	97 (14)	52 (6)	20 (7)	593
Heterosexual	9 (<1)	26 (4)	15 (2)	4 (1)	57
Other	5 (<1)	2 (<1)	4 (<1)	1 (<1)	12
No reported risk	116 (3)	74 (11)	36 (4)	13 (4)	319
<i>Age in Years (as of 12/31/2007)</i>					
<13	0 (0)	0 (0)	0 (0)	0 (0)	0
13 - 24	45 (1)	21 (3)	30 (4)	8 (3)	107
25 - 49	2,710 (69)	416 (60)	674 (82)	264 (87)	4,188
50+	1,190 (30)	261 (37)	120 (15)	31 (10)	1,643
Male Subtotal	3,945	698	824	303	5,938
Female					
<i>Exposure Category</i>					
IDU	68 (55)	82 (46)	20 (35)	15 (43)	190
Heterosexual	27 (22)	57 (32)	20 (35)	16 (46)	126
Other	3 (2)	4 (2)	3 (5)	0 (0)	12
No reported risk	26 (21)	35 (20)	14 (25)	4 (11)	86
<i>Age in Years (as of 12/31/2007)</i>					
<13	0 (0)	1 (1)	4 (7)	0 (0)	6
13 - 24	5 (4)	6 (3)	4 (7)	0 (0)	17
25 - 49	91 (73)	101 (57)	39 (68)	26 (74)	270
50+	28 (23)	70 (39)	10 (18)	9 (26)	121
Female Subtotal	124	178	57	35	414
Transgender	31	59	28	17	138
Total	4,100	935	909	355	6,490

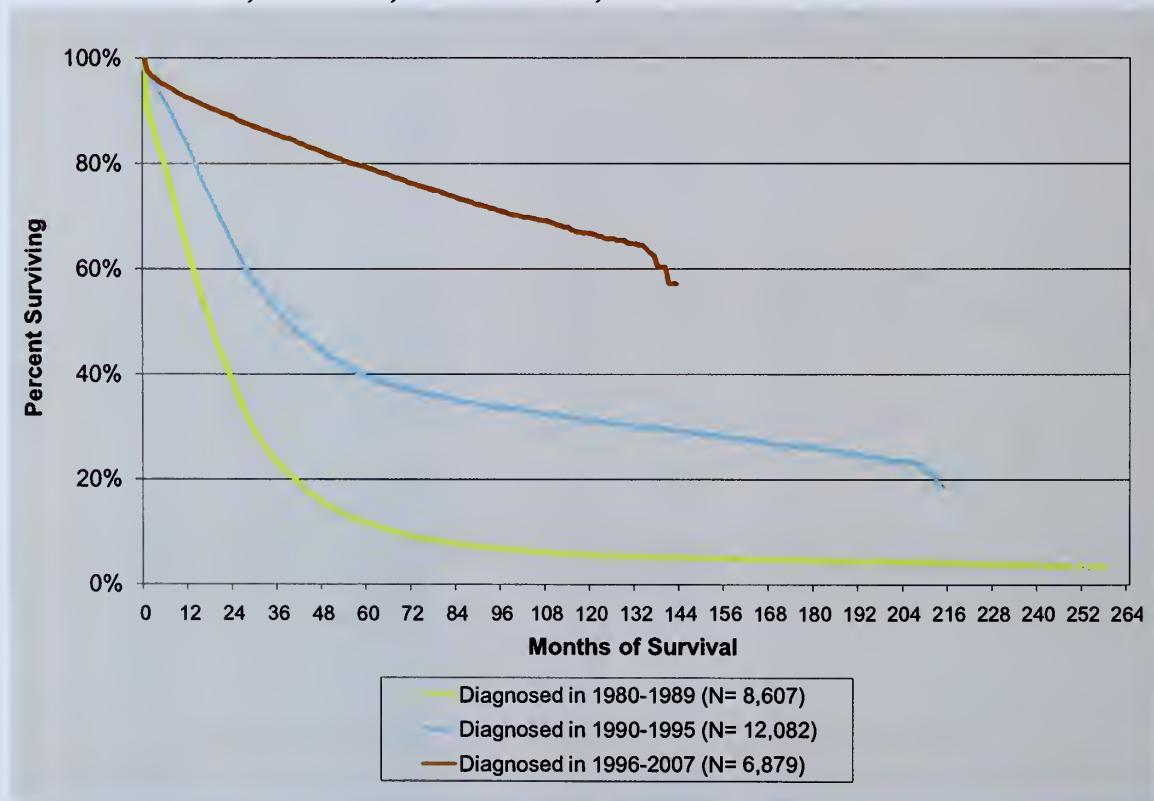
* Includes persons with multiple race or whose race/ethnicity information is not available.

4

Survival among Persons with AIDS

The Kaplan-Meier curve in Figure 4.1 demonstrates that survival improved for San Francisco AIDS cases between 1996 and 2007, compared to persons diagnosed in earlier time periods. Survival was poor for persons diagnosed in the first ten years of the AIDS epidemic (1980-1989) with 50% cases surviving 18 months (median survival time) after AIDS diagnosis. Between 1990 and 1995, survival improved; median survival time was 39 months. Approximately 57% of persons diagnosed with AIDS in 1996 and 2007 are still alive as of December 31, 2007. Improved survival among persons diagnosed with AIDS after 1995 are attributed to more effective antiretroviral therapies.

Figure 4.1 Kaplan-Meier survival* curves for persons diagnosed with AIDS in 1980-1989, 1990-1995, and 1996-2007, San Francisco

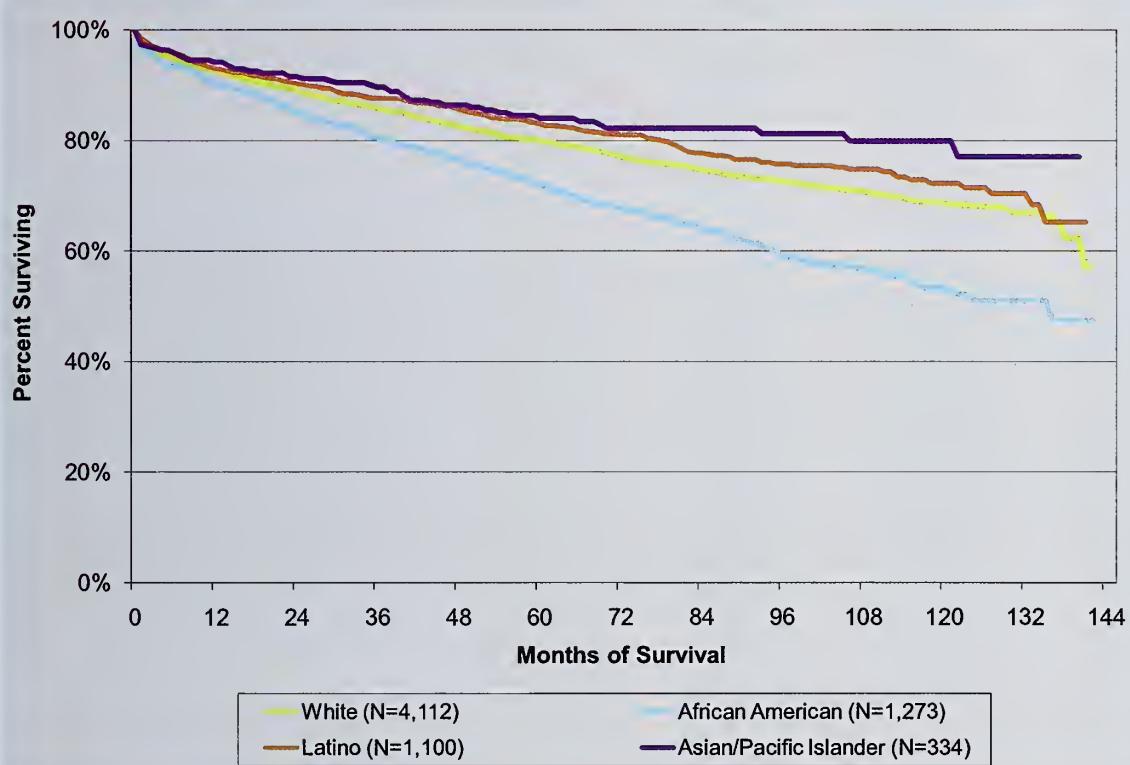


* See Technical Notes "AIDS Survival."

Survival after AIDS diagnosis is worse for African Americans than other race/ethnic groups (Figure 4.2). Among persons diagnosed between 1996 and 2007, the percent of African Americans surviving 60 months (5 years) after AIDS was 72%, compared to 80% for whites, 83% for Latinos, and 84% for Asians/Pacific Islanders. The percent surviving 84 months (seven years) after AIDS diagnosis was 64% for African Americans, 75% for whites, 78% for Latinos, and 82% for Asians/Pacific Islanders.

These survival differences may be due to lower proportions of African American AIDS cases on highly active antiretroviral therapies. Other reasons for these differences are not entirely understood.

Figure 4.2 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2007 by race/ethnicity, San Francisco

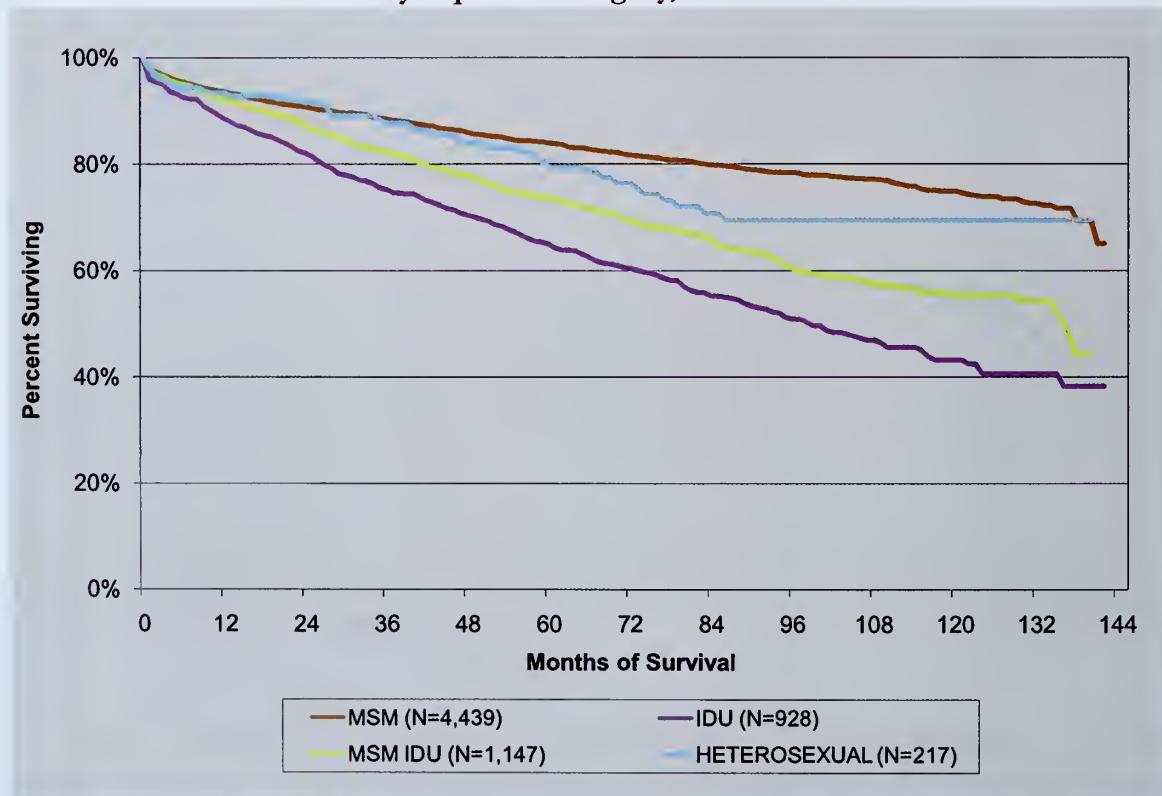


* See Technical Notes "AIDS Survival."

Survival after AIDS diagnosis has been better for MSM and heterosexuals compared to MSM IDU and heterosexual IDU. For AIDS cases diagnosed in 1996 to 2007, the 5-year (60 months) survival was 84% for MSM, 79% for heterosexuals, 74% for MSM IDU, and 65% for heterosexual IDU (Figure 4.3).

Worse survival among IDU may reflect their lower use of antiretroviral therapies as well as higher death rates from causes associated with drug use such as overdose, liver disease, and other infections.

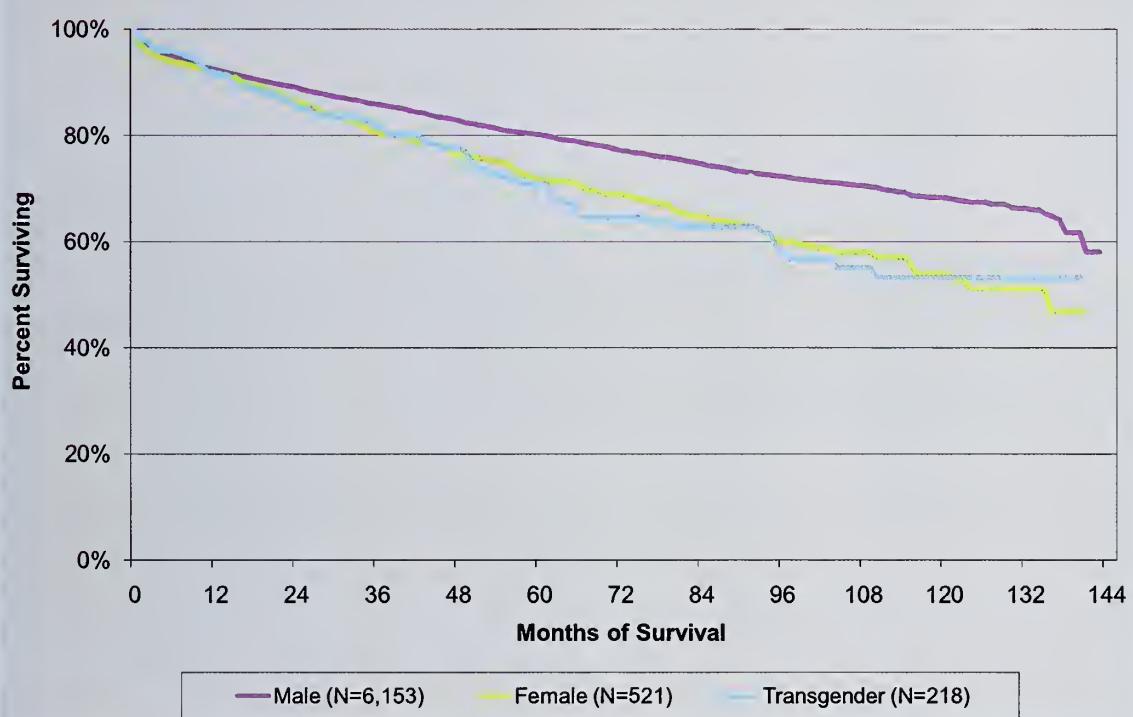
Figure 4.3 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2007 by exposure category, San Francisco



* See Technical Notes "AIDS Survival."

By gender, male AIDS cases have better survival than female and transgender AIDS cases. The Kaplan-Meier curves show that female and transgender AIDS cases have similar survival experiences (Figure 4.4). The 5-year (60 months) survival was 80% for men, 72% for women and 71% for transgender persons. The differences in survival by gender are consistent with lower use of highly active antiretroviral therapies among women and transgender AIDS cases.

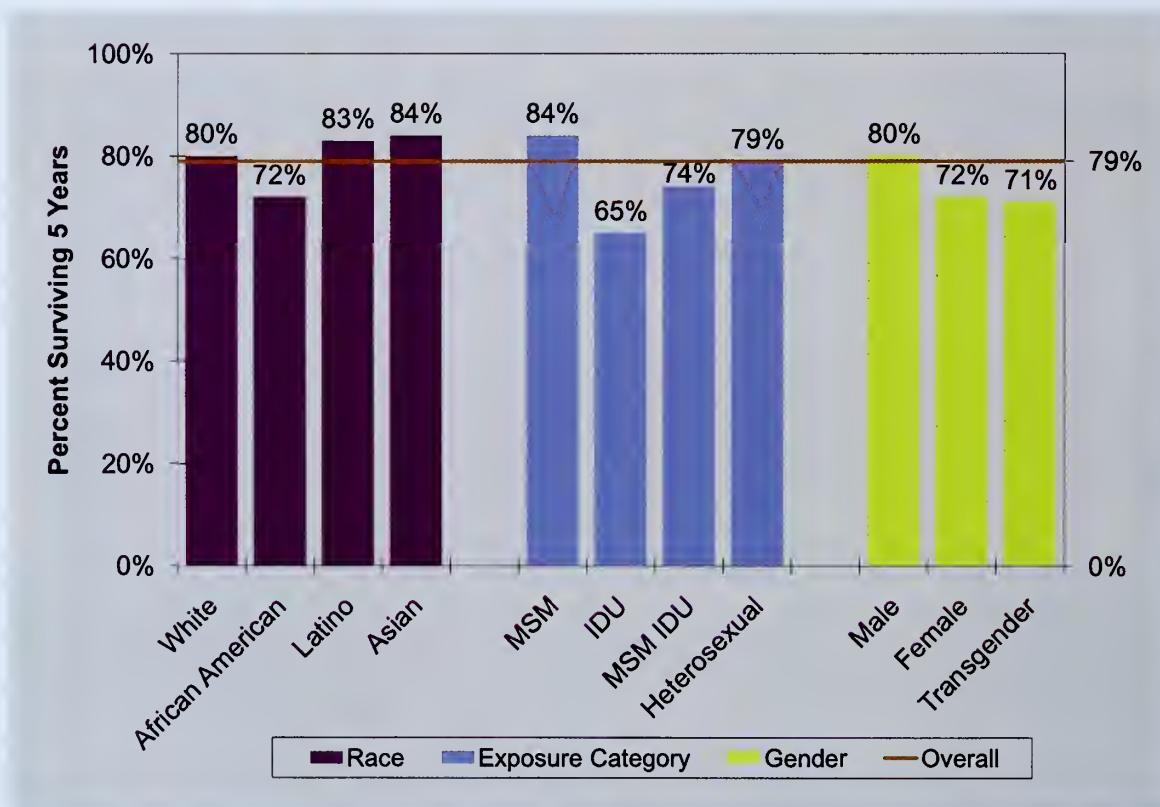
Figure 4.4 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2007 by gender, San Francisco



* See Technical Notes "AIDS Survival."

The overall 5-year survival after AIDS for persons diagnosed with AIDS between 1996 and 2007 is 79% (Figure 4.5). Differences in survival occurred across race/ethnicity, exposure category, and gender groups. African Americans, IDU, MSM IDU, women, and transgender persons with AIDS have lower proportions surviving five years compared to other groups.

Figure 4.5 Proportion surviving five years after AIDS for persons diagnosed with AIDS between 1996 and 2007 by race/ethnicity, exposure category, and gender, San Francisco



5

Trends in HIV/AIDS Mortality

AIDS surveillance data

As of December 31, 2007, a total of 18,612 deaths occurred among San Francisco AIDS cases since the beginning of the epidemic (Table 5.1). Reporting of deaths in recent years is not yet complete. The number of AIDS deaths was fairly stable across gender, race/ethnicity, and exposure categories between 2004 and 2005. The proportion of African American AIDS deaths increased between 2004 and 2005. Cumulatively, the largest number of deaths occurred in the 30-39 year old age group. However, in recent years, the largest number of deaths has shifted to the 40-49 year old age group; the 50-59 year old age group had the second largest number of deaths.

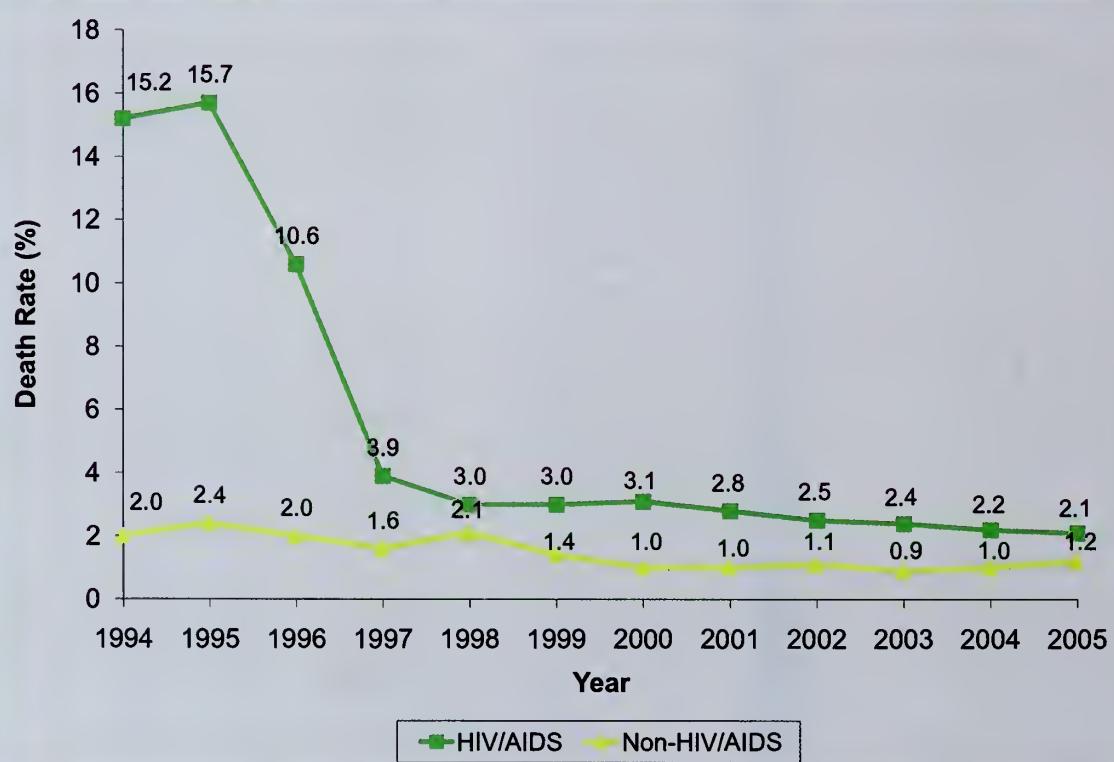
Table 5.1 Deaths in persons with AIDS, by demographic and risk characteristics, 2004-2007, San Francisco

	Year of Death				Cumulative Totals as of 12/31/2007
	2004 Number (%)	2005 Number (%)	2006* Number (%)	2007* Number (%)	
Gender					
Male	269 (88)	277 (88)	179 (84)	161 (88)	17,812
Female	23 (8)	27 (9)	25 (12)	16 (9)	618
Transgender	12 (4)	11 (3)	9 (4)	7 (4)	182
Race/Ethnicity					
White	184 (61)	183 (58)	135 (63)	115 (63)	13,965
African American	64 (21)	88 (28)	44 (21)	37 (20)	2,263
Latino	38 (12)	30 (10)	22 (10)	25 (14)	1,827
Other	18 (6)	14 (4)	12 (6)	7 (4)	557
Exposure Category					
MSM	160 (53)	167 (53)	114 (53)	99 (54)	14,038
IDU	59 (19)	62 (20)	38 (18)	38 (21)	1,328
MSM IDU	72 (24)	70 (22)	53 (25)	40 (22)	2,807
Heterosexual	5 (2)	7 (2)	4 (2)	4 (2)	172
Other/Unknown	8 (3)	9 (3)	4 (2)	3 (2)	267
Age at Death (years)					
0 - 29	6 (2)	3 (1)	0 (0)	6 (3)	1,093
30 - 39	56 (18)	39 (12)	21 (10)	18 (10)	7,145
40 - 49	115 (38)	131 (42)	86 (40)	62 (34)	6,979
50 - 59	78 (26)	94 (30)	79 (37)	60 (33)	2,529
60+	49 (16)	48 (15)	27 (13)	38 (21)	866
Total	304 (100)	315 (100)	213 (100)	184 (100)	18,612

* Data are incomplete due to reporting delay. In addition, deaths that occurred outside of San Francisco are primarily identified through matching with the National Death Index (NDI) which is complete only through 2005.

The trend in death rates in persons with AIDS was examined according to the single, underlying cause of death for each person. The death rate due to HIV/AIDS-related causes declined from 15.7 per 100 persons with AIDS in 1995 to 2.1 per 100 persons with AIDS in 2005. The drop in death rates beginning in 1996 reflects the impact of highly active antiretroviral therapies. For non-HIV/AIDS-related causes, the death rate in 1994 was 2.0 per 100 persons with AIDS, declining to 1.2 per 100 persons with AIDS in 2005.

Figure 5.1 Death rates* due to HIV/AIDS-related and non-HIV/AIDS-related causes among persons with AIDS, 1994-2005, San Francisco



* Death rates are calculated as the number of persons with AIDS who died each year divided by the number of total AIDS cases for that year. See Technical Notes for "Causes of Death."

The proportion of deaths in which HIV/AIDS was listed as the underlying cause of death decreased from 85% of AIDS deaths occurring in 1994-1997 to 68% in 2002-2005 (Table 5.2). The proportion of deaths in which HIV/AIDS was the underlying cause has remained level in the latter two time periods 1998-2001 and 2002-2005. Other frequently occurring underlying causes of death in 2002-2005 include non-AIDS cancer (7.9%), heart disease (5.1%), liver disease (2.4%), and drug overdose (2.4%). The proportion of persons with AIDS who died of these non-HIV/AIDS-related conditions increased over time.

Table 5.2 Underlying causes of death among persons with AIDS*, 1994-2005, San Francisco

Underlying Cause of Death [#]	Year of Death					
	1994-1997 N= 4,218		1998-2001 N= 1,375		2002-2005 N= 1,184	
	Number	(%)	Number	(%)	Number	(%)
HIV/AIDS	3,585	(85.0)	943	(68.6)	809	(68.3)
Non-AIDS cancer	81	(1.9)	85	(6.2)	93	(7.9)
Lung cancer	22	(0.5)	27	(2.0)	25	(2.1)
Liver cancer	7	(0.2)	18	(1.3)	18	(1.5)
Anal cancer	3	(0.1)	4	(0.3)	7	(0.6)
Hodgkins lymphoma	10	(0.2)	0	(0.0)	1	(0.1)
Heart disease	47	(1.1)	72	(5.2)	60	(5.1)
Coronary heart disease	18	(0.4)	36	(2.6)	37	(3.1)
Cardiomyopathy	4	(0.1)	12	(0.9)	6	(0.5)
Liver disease	37	(0.9)	24	(1.7)	29	(2.4)
Liver cirrhosis	10	(0.2)	8	(0.6)	16	(1.4)
Alcoholic liver disease	12	(0.3)	14	(1.0)	9	(0.8)
Drug overdose	47	(1.1)	41	(3.0)	28	(2.4)
Mental disorders due to substance use	16	(0.4)	12	(0.9)	25	(2.1)
Suicide	36	(0.9)	25	(1.8)	24	(2.0)
Chronic obstructive lung disease	20	(0.5)	13	(0.9)	19	(1.6)
Cerebrovascular disease	13	(0.3)	12	(0.9)	10	(0.8)
Viral hepatitis	61	(1.4)	36	(2.6)	8	(0.7)
Septicemia	7	(0.2)	4	(0.3)	6	(0.5)
Renal disease	10	(0.2)	3	(0.2)	1	(0.1)
Pneumonia	42	(1.0)	9	(0.7)	0	(0.0)
Aspergillosis	62	(1.5)	8	(0.6)	0	(0.0)

* Deceased AIDS cases without cause of death information are not represented in this table.

See Technical Notes "Causes of Death."

Table 5.3 shows both underlying and contributory causes of death among persons with AIDS. HIV/AIDS-related causes continue to contribute to more than 80% of deaths in AIDS cases. Similar to that observed from the underlying causes of death (Table 5.2), several non-HIV/AIDS related causes increased over time. Deaths due to viral hepatitis showed the largest percentage increase between time periods 1998-2001 and 2002-2005.

Table 5.3 Multiple causes of death among persons with AIDS*, 1994-2005, San Francisco

Multiple Causes of Death[#]	Year of Death		
	1994-1997		1998-2001
	N = 4,218	No. (%)	N = 1,375
HIV/AIDS	3,989	(94.6)	1,167 (84.9)
Heart disease	606	(14.4)	279 (20.3)
Coronary heart disease	36	(0.9)	60 (4.4)
Cardiomyopathy	47	(1.1)	35 (2.5)
Liver disease	230	(5.5)	193 (14.0)
Liver cirrhosis	71	(1.7)	71 (5.2)
Alcoholic liver disease	18	(0.4)	18 (1.3)
Viral hepatitis	106	(2.5)	146 (10.6)
Pneumonia	682	(16.2)	199 (14.5)
Non-AIDS cancer	259	(6.1)	125 (9.1)
Lung cancer	25	(0.6)	29 (2.1)
Liver cancer	9	(0.2)	23 (1.7)
Anal cancer	3	(0.1)	7 (0.5)
Hodgkins lymphoma	14	(0.3)	3 (0.2)
Septicemia	270	(6.4)	129 (9.4)
Renal disease	160	(3.8)	93 (6.8)
Mental disorders due to substance use	60	(1.4)	60 (4.4)
Chronic obstructive lung disease	55	(1.3)	43 (3.1)
Drug overdose	56	(1.3)	53 (3.9)
Cerebrovascular disease	57	(1.4)	39 (2.8)
Suicide	36	(0.9)	25 (1.8)
Aspergillosis	91	(2.2)	25 (1.8)
			5 (0.4)

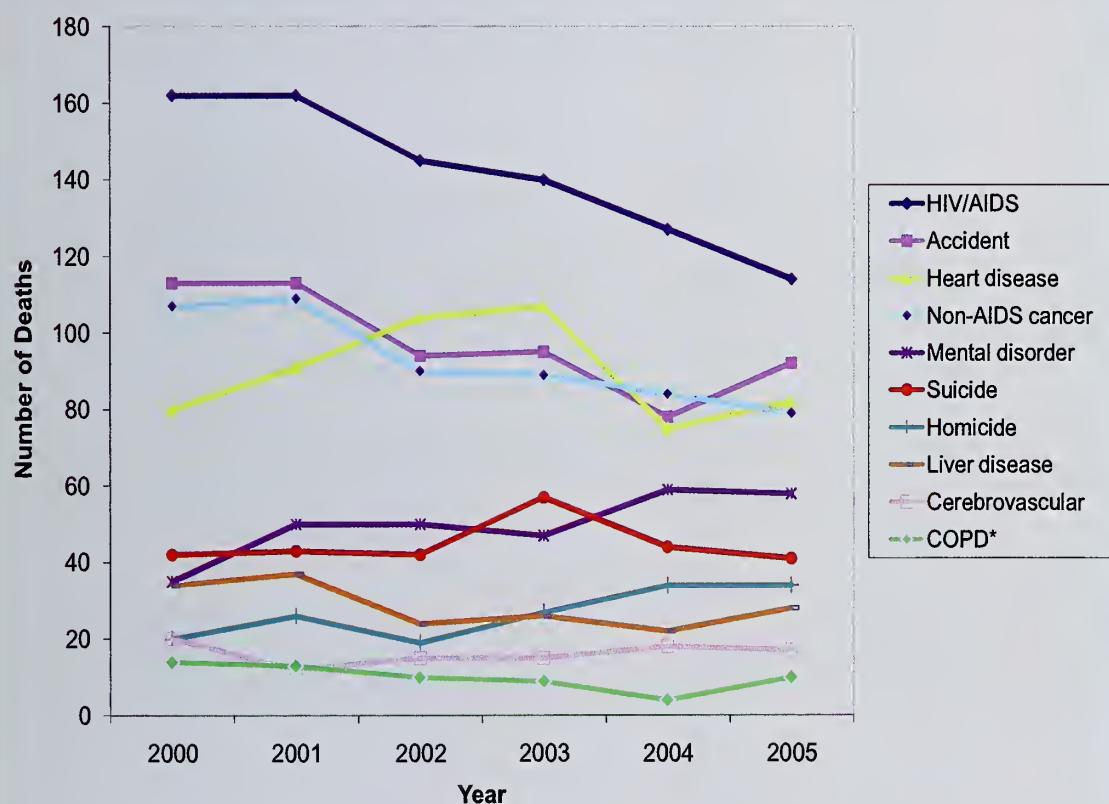
* Deceased AIDS cases without cause of death information are not represented in this table.

Includes underlying and contributory causes of death. Individuals may have more than one cause of death. See Technical Notes "Causes of Death."

Vital statistics death data

We examined data obtained from the California Vital Statistics Death Files for San Francisco residents who died between 2000 and 2005 to compare number of deaths and death rates by gender, age, and race/ethnicity. Cause of death was determined by using a set of ICD-10 codes that specify the underlying cause of death; this method is consistent with the National Vital Statistics Reports. Although the number of deaths attributed to HIV/AIDS has declined from 2000 to 2005, HIV/AIDS remains the leading cause of death for men aged 25-54 years in San Francisco (Figure 5.2). Accidents and non-AIDS cancers also demonstrated a decreasing trend from 2000 to 2004 while heart disease displayed a marked increase in deaths from 2000 to 2003 before a significant decrease in 2004. By 2005, accidents were the second leading cause of death followed by heart disease and non-AIDS cancer.

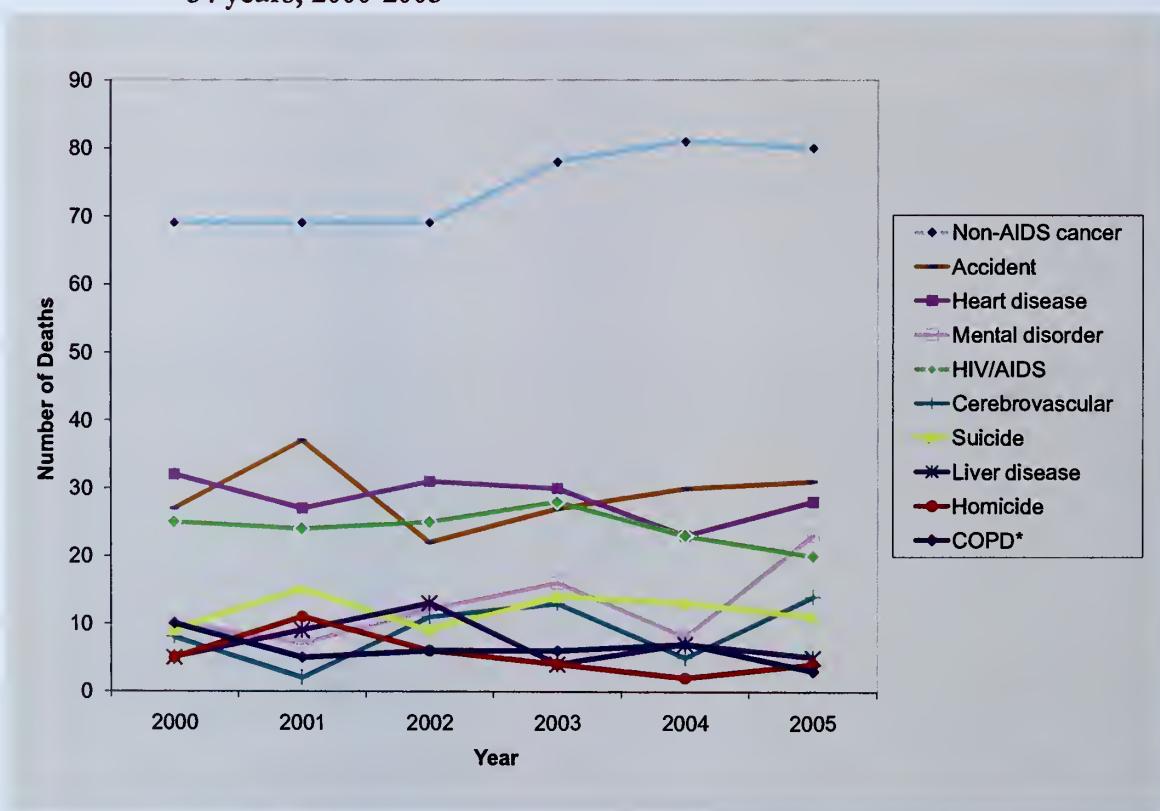
Figure 5.2 Leading causes of death among San Francisco male residents aged 25-54 years, 2000-2005



* COPD: chronic obstructive pulmonary disease.

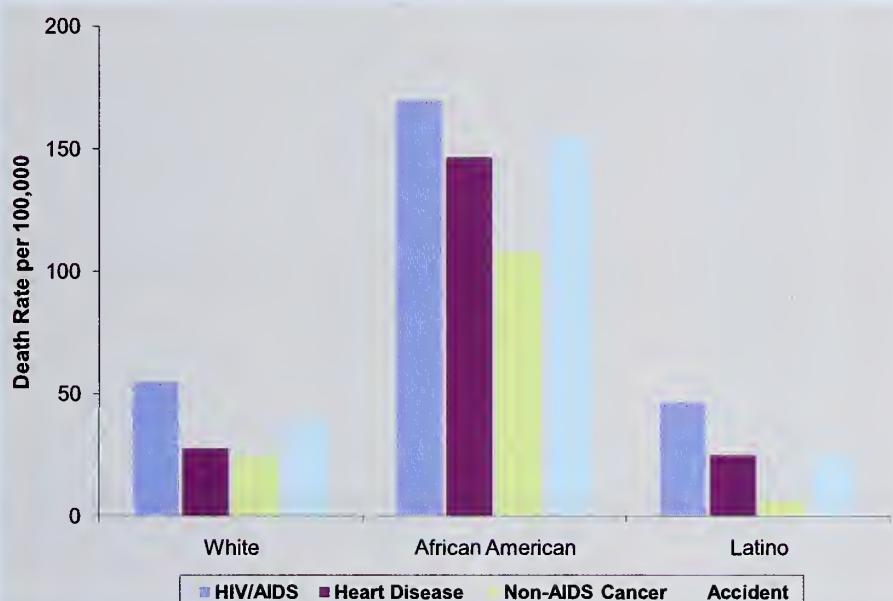
San Francisco women had significantly lower numbers of deaths from HIV/AIDS in comparison to their male counterparts. In 2005, 114 men aged 25-54 years died of HIV/AIDS while 20 women in the same age group died of HIV/AIDS. The number of female deaths attributed to HIV/AIDS peaked in 2003 (23 deaths) before declining to become the fifth leading cause of death for women aged 25-54 years in 2005 (Figure 5.3). Non-AIDS cancer was the leading cause of death for female residents.

Figure 5.3 Leading causes of death among San Francisco female residents aged 25-54 years, 2000-2005



African American males suffered from disproportionate death rates across all leading causes of death in comparison to their white and Latino counterparts. For example, the HIV/AIDS-related death rate for African-Americans (170 per 100,000) was at least 3 times higher than the rates for white (55 per 100,000) and Latino (46 per 100,000) men. Overall, HIV/AIDS was the leading cause of death in 2005 among African-American, white, and Latino men, followed by accident, heart disease and cancer (Figure 5.4).

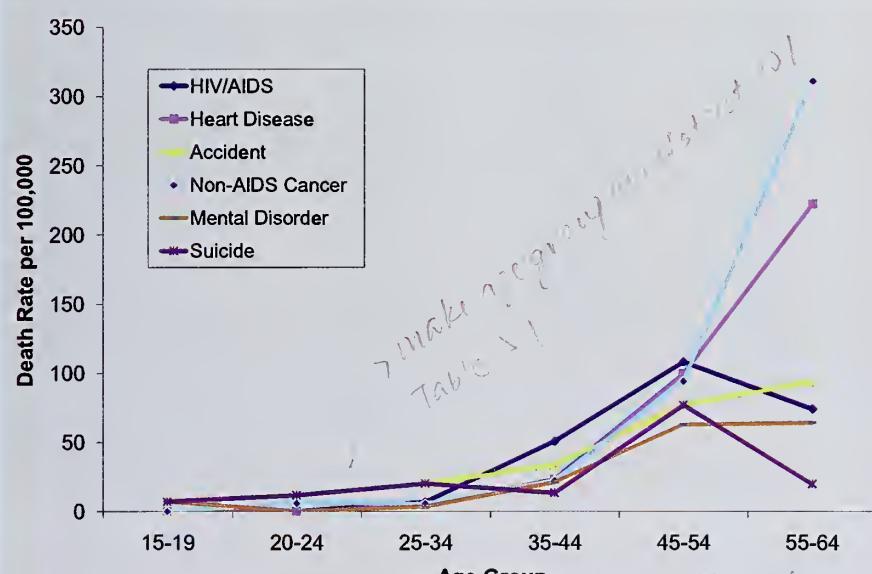
Figure 5.4 Leading causes of death rates per 100,000 population among San Francisco male residents* aged 25-54 years by race/ethnicity, 2005



* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file.

The age-specific death rates show accidents and suicides were higher among younger men aged 15-34 (Figure 5.5). The HIV/AIDS-related death rates were higher among men aged 35-54, especially among men aged 45-54 who had the highest HIV/AIDS-related death rate (108 per 100,000). Men aged 55-64 suffered higher death rates from chronic conditions such as non-AIDS cancers and heart disease.

Figure 5.5 Leading causes of death rates per 100,000 population among San Francisco male residents* aged 15-64 years by age group, 2005



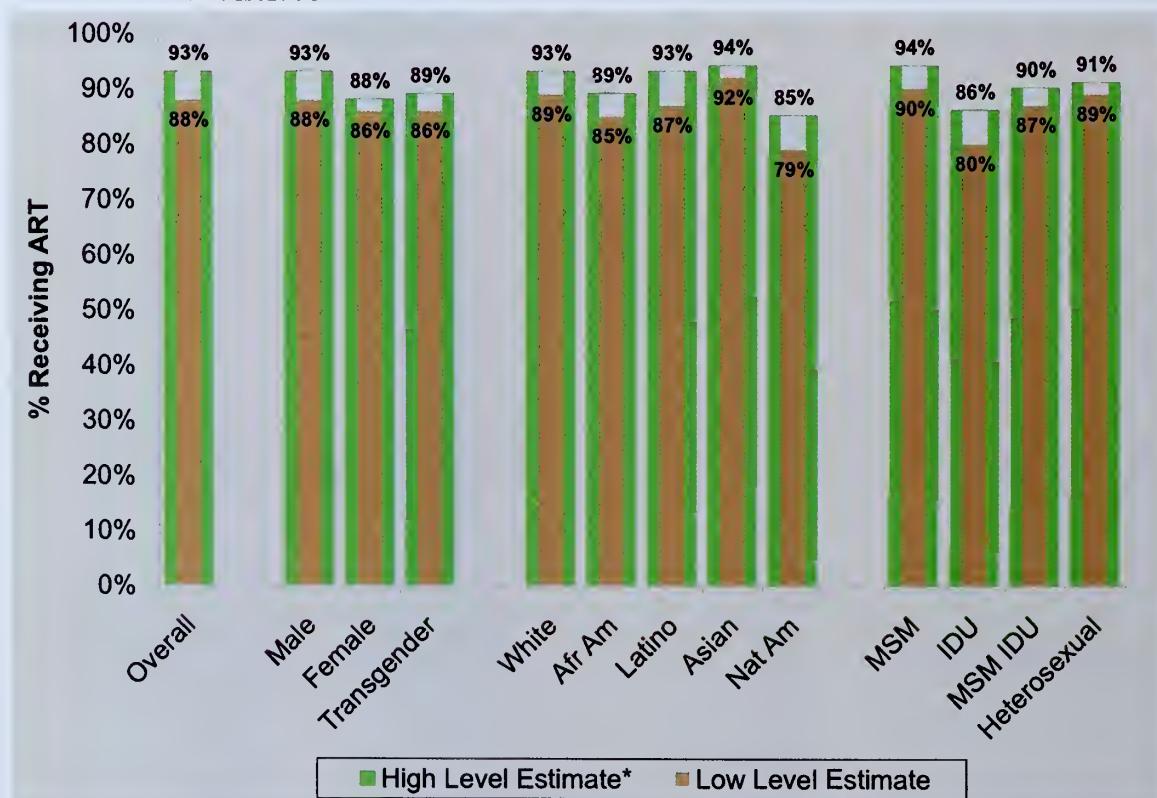
* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file.

6

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Figure 6.1 shows estimate of antiretroviral therapy (ART) use among persons living with AIDS as of December 31, 2007. The lower percentage shown in the figure provides the crude estimate of ART use among all persons living with AIDS. The higher percentage, including the grey area, was calculated among persons who have had follow-up information within the last two years and are not known to have moved out of San Francisco. Because this calculation excludes persons who moved or lost-to-follow-up and whose treatment information may be incomplete, it provides an upper level estimate of ART use. Overall, 88%-93% of persons living with AIDS received ART. ART use was slightly lower among females, transgender persons, African Americans and Latinos. Use of ART among Native Americans and injection drug users was considerably lower compared to other groups.

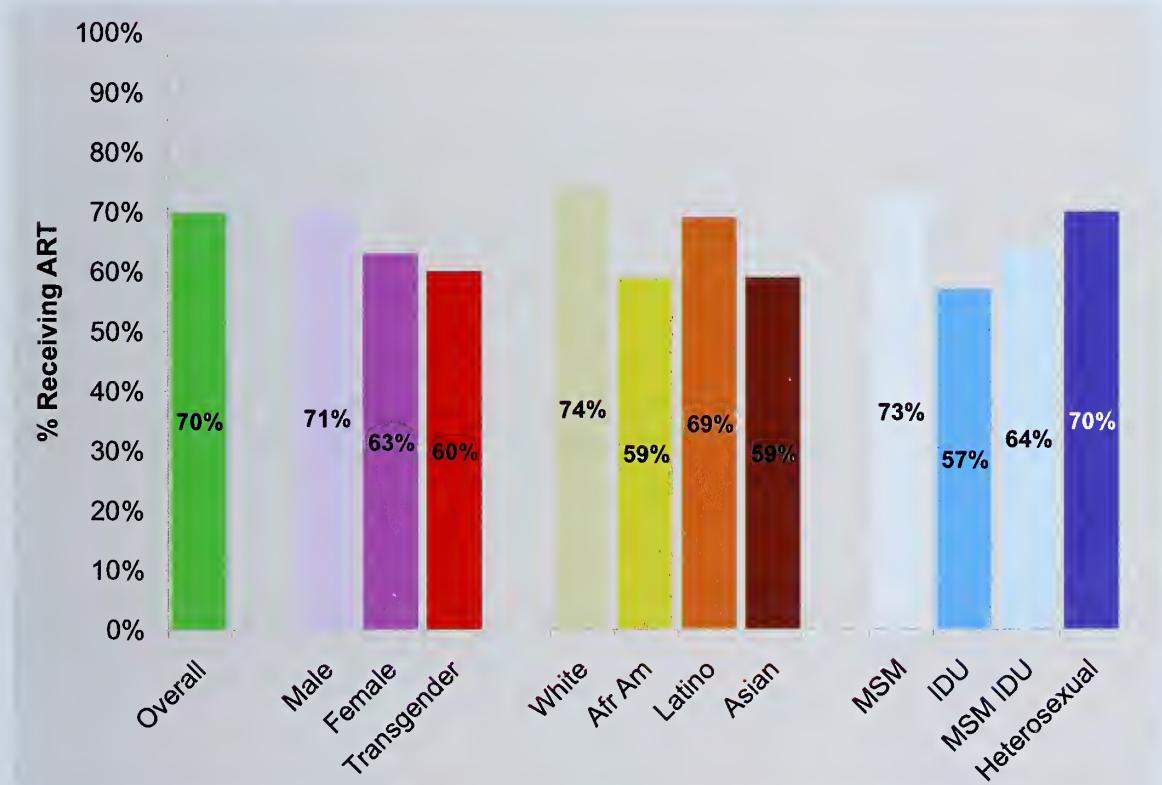
Figure 6.1 Estimate of antiretroviral therapy use among persons living with AIDS by gender, race/ethnicity, and exposure category, December 2007, San Francisco



* Top value of percentage (including the grey area) indicates the proportion of ART use after excluding persons who were lost-to-follow-up.

Figure 6.2 shows use of ART among persons living with HIV who have not progressed to AIDS with a CD4 count between 200 and 350 cells/ μL (the eligibility criteria for ART use) at any point after their HIV diagnosis. As of December 31, 2007, there were a total of 6,442 persons living with HIV non-AIDS. Of these, 90% have at least one CD4 count available and 73% have CD4 within 12 months after their HIV diagnosis. Thirty-five percent, or 2,228, of living HIV cases met the eligibility criteria for ART use. Overall, 70% of persons with HIV non-AIDS, who were eligible for treatment, received ART. Disparity in ART use is apparent, with females and transgender persons being less likely to receive ART than males. People of color were also less likely to receive ART. Information for Native Americans is not listed due to small numbers. Injection drug users have the lowest proportion of ART use.

Figure 6.2 Use of antiretroviral therapy among persons living with HIV non-AIDS by gender, race/ethnicity, and exposure category, December 2007, San Francisco



7

Insurance Status at Time of HIV/AIDS Diagnosis

Men, women, and transgender persons have different insurance status at the time of AIDS diagnosis. The proportion of men with private insurance was fairly stable between 2002 and 2007 and was consistently higher than proportions of women and transgender persons with private insurance (Figure 7.1). Most women had public insurance, with the percentage being greater than 50% since 2003. Among transgender persons, there was an increase in the percentage with public insurance between 2002 and 2006.

For AIDS cases diagnosed between 2002 and 2007, 93% of transgenders and 85% of women were underinsured (i.e. having no insurance or public insurance), compared to 54% of men (Figure 7.2).

Figure 7.1 Trends in insurance status among persons with AIDS by gender, 2002-2007, San Francisco

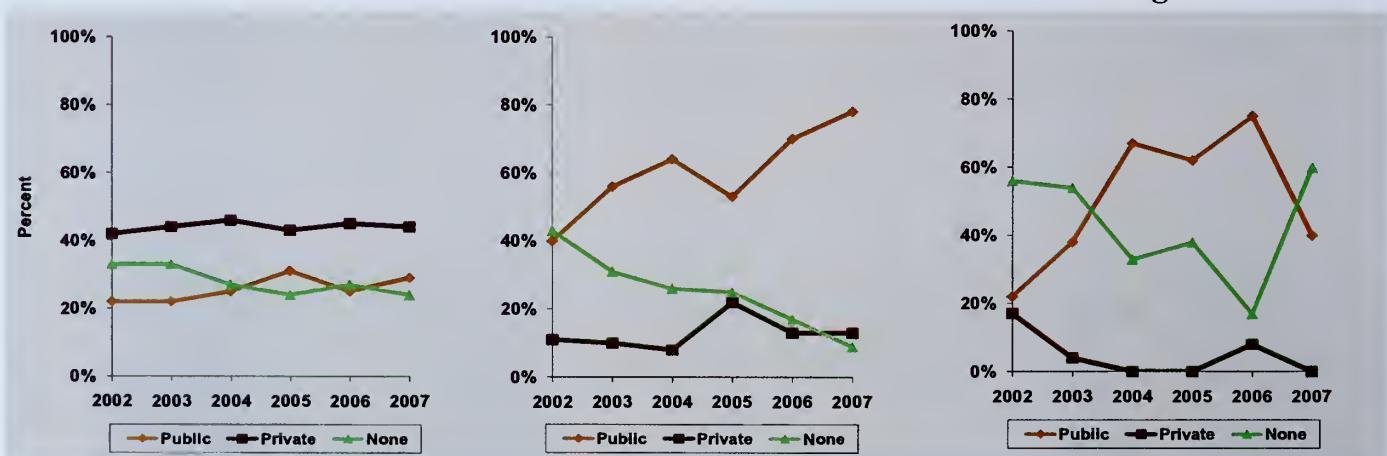
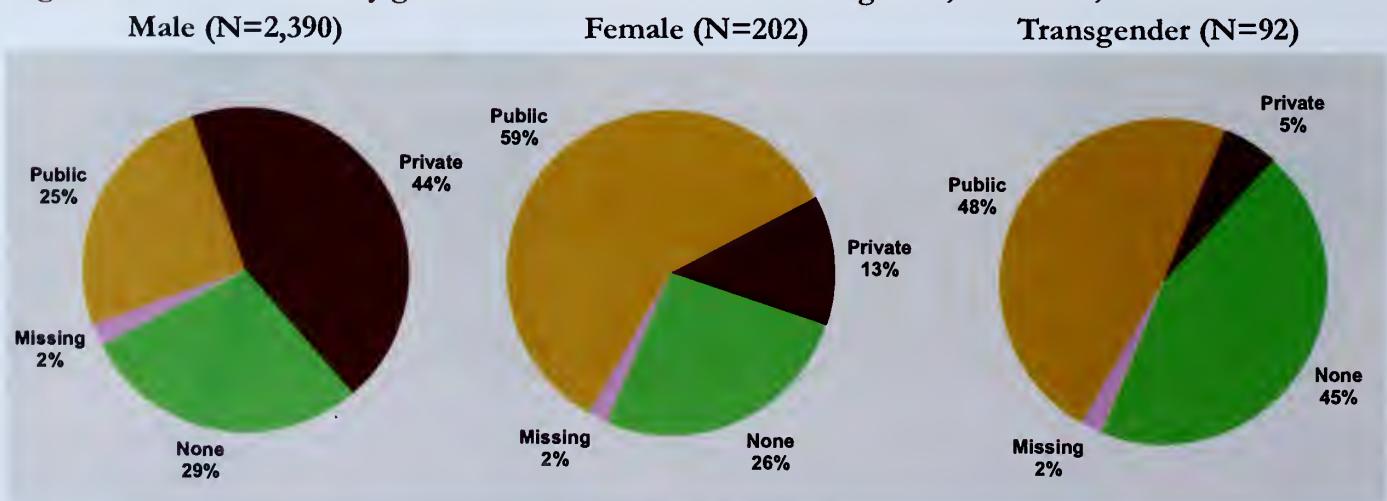


Figure 7.2 AIDS cases by gender and insurance status at diagnosis, 2002-2007, San Francisco

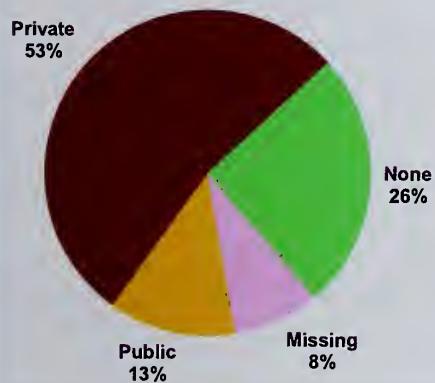


We examined the insurance status for HIV non-AIDS cases reported between 2002 and 2007, which includes cases diagnosed before and during this time period. Compared to AIDS cases (Figure 7.2), a higher proportion of HIV non-AIDS cases had private insurance at the time of HIV diagnosis (Figure 7.3). In addition, a greater percentage of HIV non-AIDS cases did not have insurance status available. HIV non-AIDS cases without insurance information reported were those whose follow-up information could not be obtained from the health care providers.

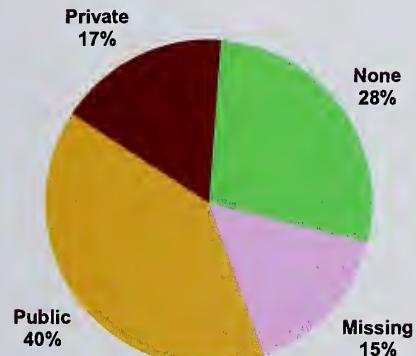
Similar to AIDS cases there were differences in insurance status by gender for HIV non-AIDS cases. Thirty-nine percent of male HIV non-AIDS cases were under-insured, compared to 68% of female and 80% of transgender HIV non-AIDS cases (Figure 7.3).

Figure 7.3 HIV non-AIDS cases by gender and insurance status at diagnosis, cases reported in 2002-2007, San Francisco

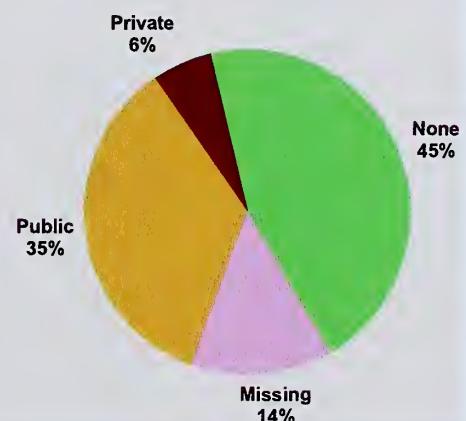
Male (N=5,995)



Female (N=425)



Transgender (N=135)



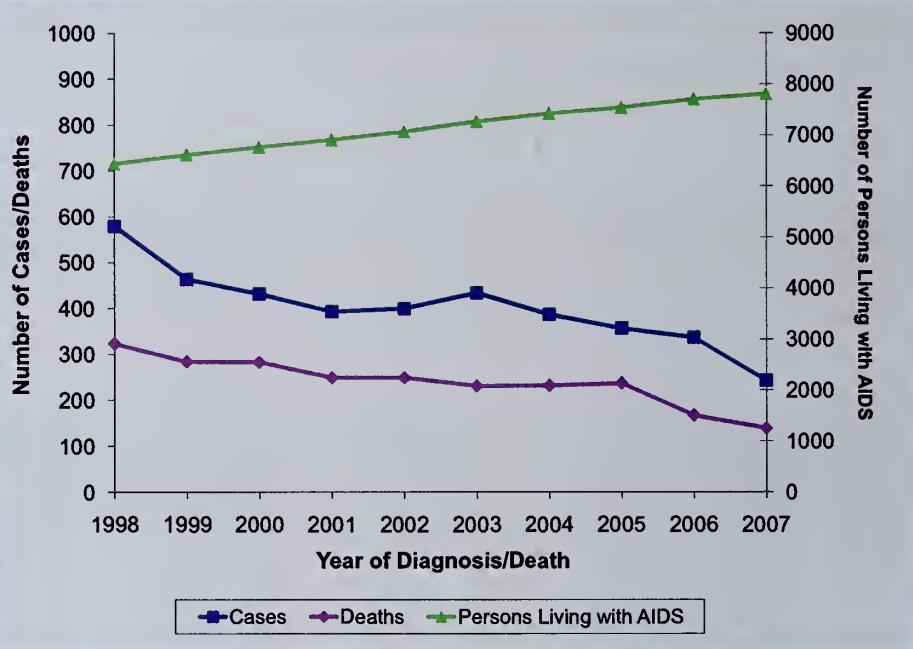
8

HIV/AIDS among Men Who Have Sex with Men

AIDS surveillance data

Over the last decade, numbers of AIDS cases and AIDS deaths declined among MSM coupled with an increase in MSM living with AIDS. Between 2003 and 2005, deaths among MSM were stable (Figure 8.1). In 2007, there were 7,809 MSM living with AIDS in San Francisco.

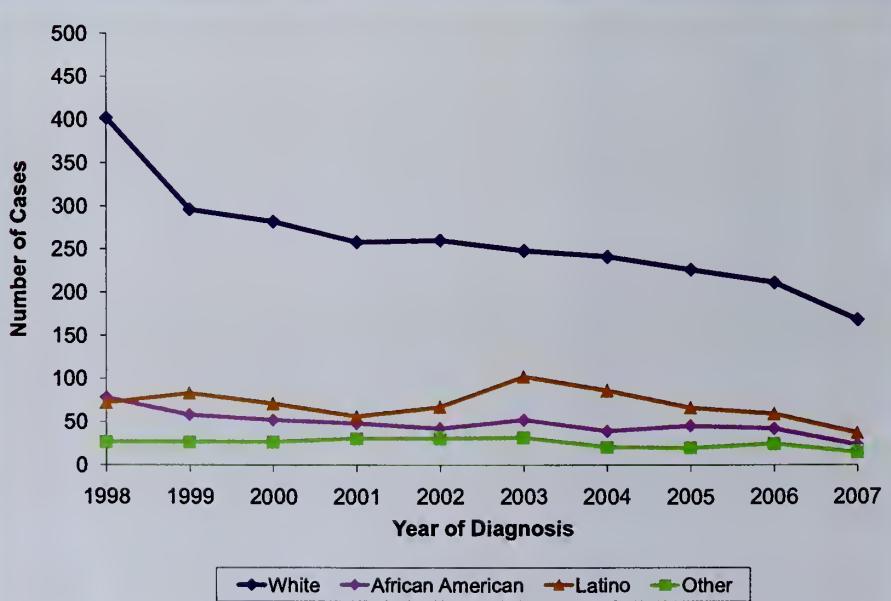
Figure 8.1 AIDS cases, deaths, and prevalence among MSM*, 1998-2007, San Francisco



* Includes MSM and MSM IDU.

The majority of San Francisco's MSM AIDS cases are white (Figure 8.2). Since 1999, Latino has been the second largest race/ethnic group among MSM AIDS cases. In 2007 there were 168 white MSM, 37 Latino MSM, and 23 African American MSM diagnosed with AIDS in San Francisco.

Figure 8.2 AIDS cases among MSM* by race/ethnicity, 1998-2007, San Francisco



* Includes MSM and MSM IDU.

HIV sexual behavior data

The Stop AIDS Project collects information on sexual behavior and self-reported HIV status through the course of outreach HIV prevention activities for MSM in San Francisco. Their data provide an opportunity to track annual trends in HIV-related risk behavior in a large, community-recruited sample of MSM.

Figure 8.3 illustrates trends in unprotected anal intercourse (UAI) from 1999 through 2007 by self-reported HIV serostatus. An overall trend of increasing UAI is apparent among HIV-positive as well as HIV-negative MSM. Figure 8.3 also illustrates that UAI is more commonly reported by HIV-positive MSM, and may be rising faster.

Figure 8.4 shows the proportion of MSM who report having UAI with one or more sex partners whose HIV status was not known to them. This measure gauges the potential for HIV transmission to occur by excluding sex between individuals known to be of the same HIV status. Overall, UAI with potentially HIV-serodiscordant men peaked in 2001. Recent years show a leveling off in potentially serodiscordant UAI among HIV-negative MSM, with a potential resurgence among HIV-positive MSM.

Figure 8.3 Percent of MSM reporting unprotected anal intercourse in the last six months by self-reported HIV status, the Stop AIDS Project, 1999-2007, San Francisco

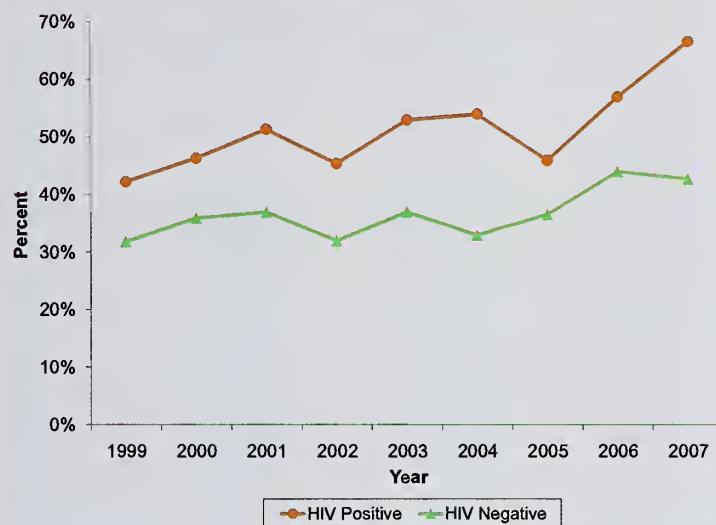
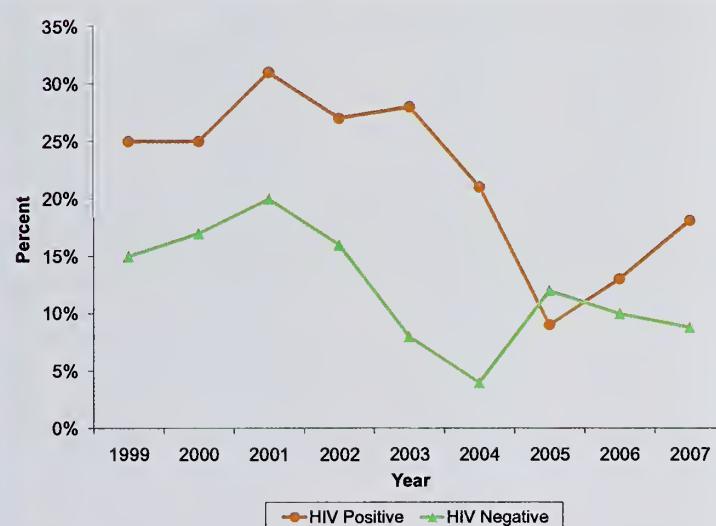


Figure 8.4 Percent of MSM reporting unprotected anal intercourse in the last six months with at least one partner of unknown HIV status by self-reported HIV status, the Stop AIDS Project, 1999-2007, San Francisco



Sexually transmitted diseases among MSM

Figure 8.5 shows trends in male rectal gonorrhea and male gonococcal proctitis in San Francisco from 1998 through 2007. Data on male rectal gonorrhea originate from case reporting from laboratories and health providers throughout the city. Data on male gonococcal proctitis originate from the municipal STD clinic only. Infection with gonorrhea is a biological marker for high risk sexual behavior as well as a factor that enhances the acquisition and spread of HIV. Among men, rectal gonorrhea is a marker for unprotected receptive anal sex.

The last several years have seen a steady increase in reported cases of male rectal gonorrhea followed by a decrease or leveling off in 2007. Male gonococcal proctitis are cases with symptomatic infection. Data on male gonococcal proctitis suggest that some of the increase in reported male rectal gonorrhea may be due to increased screening.

Data may underestimate true levels of infections due to several factors, including lack of rectal screening by many health providers, under reporting, delayed reporting, and a large proportion of cases that do not manifest symptoms.

Figure 8.5 Male rectal gonorrhea and male gonococcal proctitis among MSM, 1998-2007, San Francisco

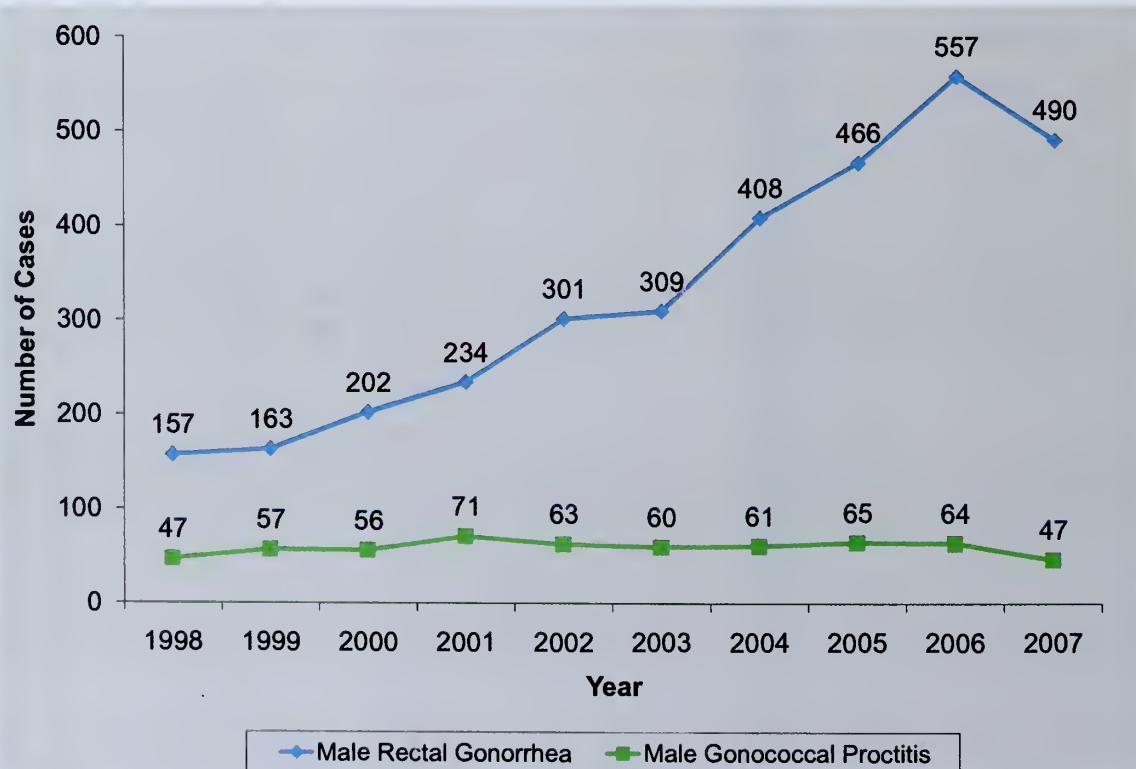
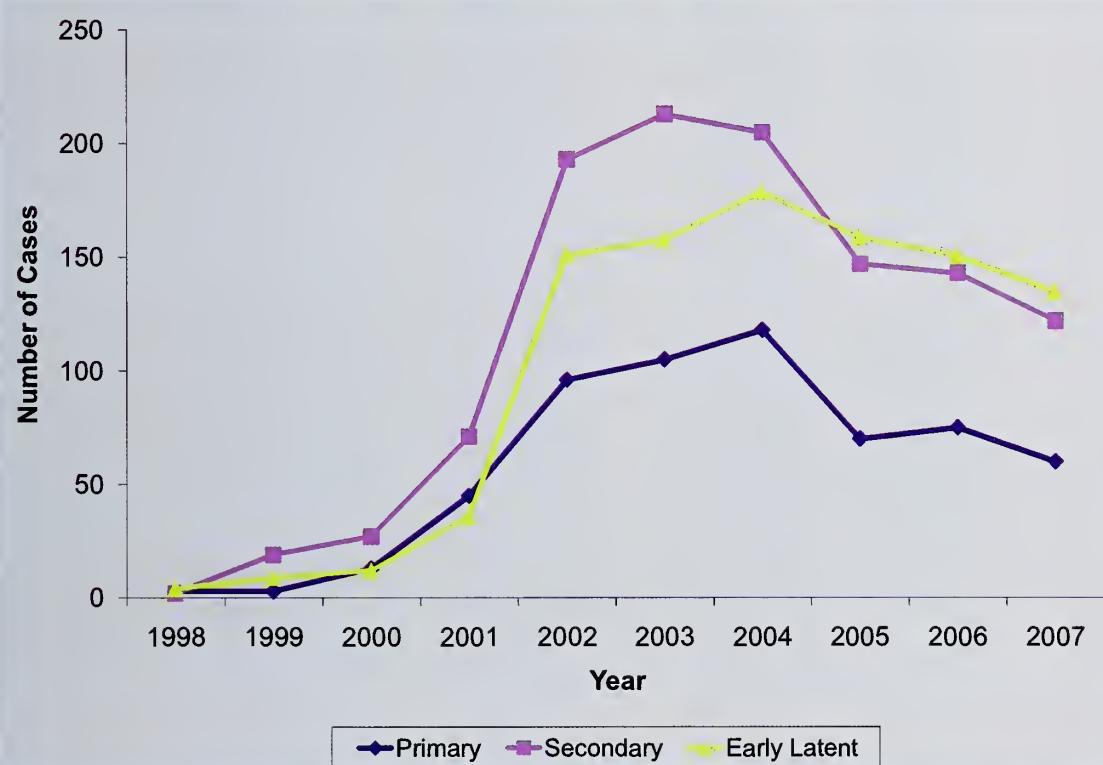


Figure 8.6 shows trends in primary, secondary, and early latent cases of syphilis among MSM in San Francisco from 1998 through 2007. Data originate from case reporting from laboratories and health providers throughout the city although the majority are patients seen at the municipal STD clinic. Like gonorrhea, syphilis is a biological marker for high risk sexual behavior as well as a factor that enhances the acquisition and spread of HIV. The increase in early syphilis among MSM in San Francisco since 1998 is dramatic. However, in 2005, for the first time since this rapid rise, early syphilis among MSM declined.

Figure 8.6 Syphilis among MSM, 1998-2007, San Francisco



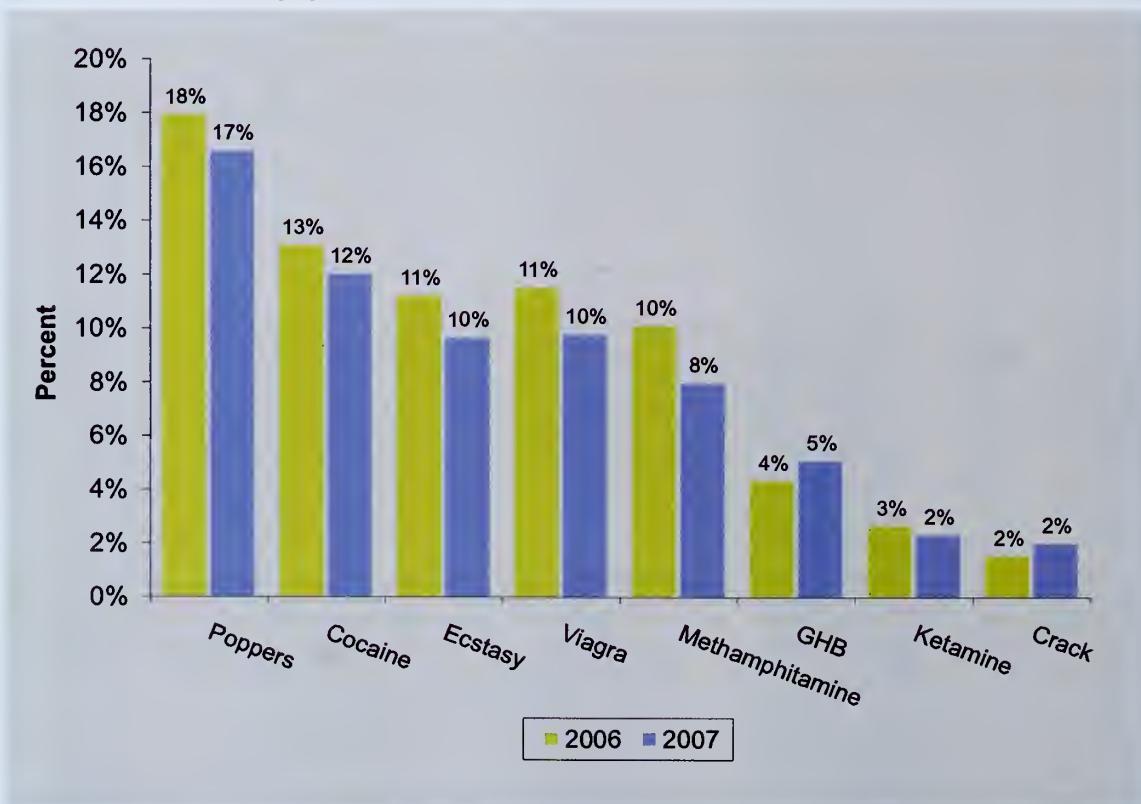
may update

Substance use

+ medical history, mental health, social support, follow-up

The STOP AIDS Project also records substance use in the last six months among MSM. Overall, fewer MSM reported diverse substance use in 2007 compared to 2006 (Figure 8.7), although most decreases are not statistically significant. Substance use, particularly methamphetamine, continues to be strongly associated with risk for HIV acquisition.

Figure 8.7 Substance use among MSM, the Stop AIDS Project, 2006-2007, San Francisco

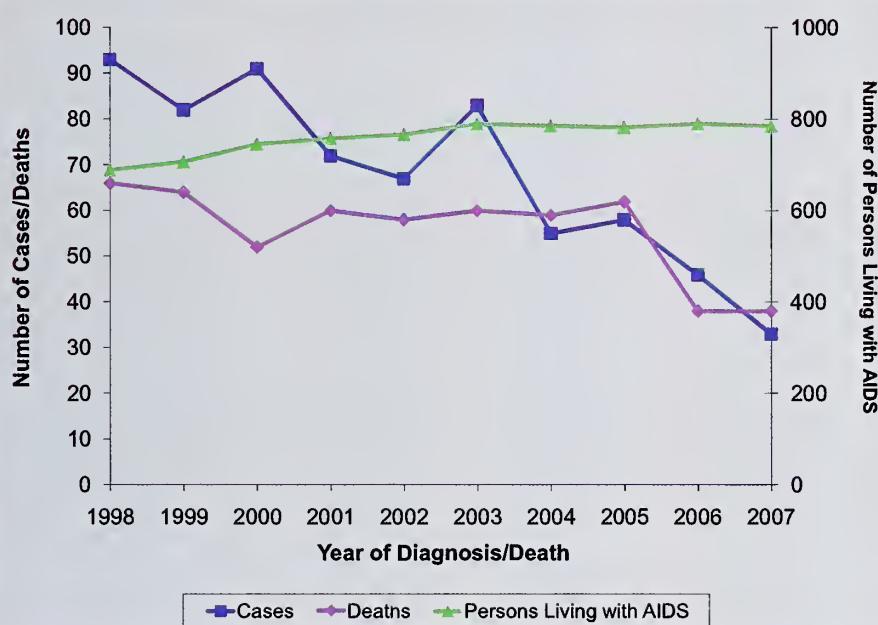


9

HIV/AIDS among Injection Drug Users

Injection drug use by non-MSM is the third most frequent exposure group among cumulative AIDS cases in San Francisco. This differs from national AIDS data where non-MSM IDU is the second most frequent exposure group among all cases. The number of living non-MSM IDU in San Francisco has been fairly level from 2004 to 2007 (Figure 9.1). This is the likely result of similar numbers of deaths and new AIDS cases in recent years. As of December 31, 2007, there were 785 non-MSM IDU living with AIDS in San Francisco.

Figure 9.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 1998-2007, San Francisco



From 1998 to 2004, African Americans accounted for the greatest number of AIDS cases among non-MSM IDU (Figure 9.2). Since 2005, the numbers of white non-MSM IDU AIDS cases has been similar to the number of African American non-MSM IDU. Non-MSM IDU who are Latino or other race/ethnicities accounted for few AIDS cases between 1998 and 2007.

Figure 9.2 AIDS cases among non-MSM IDU by race/ethnicity, 1998-2007, San Francisco

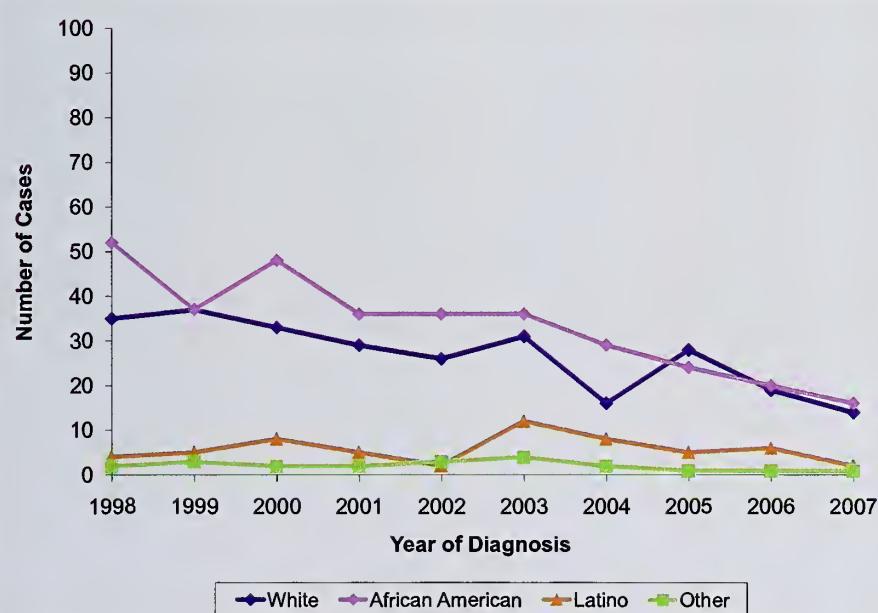


Table 9.1 shows the exposure category and race/ethnicity distributions of AIDS cases that were directly, or indirectly, associated with injection drug use. MSM IDU account for 64% of all IDU-associated AIDS cases, followed by male heterosexual IDU who account for 22 %. Whites make up the largest proportion of MSM IDU and lesbian IDU, while African Americans account for the largest proportion of IDU-associated AIDS cases in other exposure categories.

Table 9.1 Injection drug use-associated AIDS cases by exposure category and race/ethnicity, diagnosed through December 2007, San Francisco

Exposure Category	Race/Ethnicity Distribution by Percent				
	Total Number	White	African American	Latino	Other
Male heterosexual IDU	1,393	37%	49%	12%	3%
Female heterosexual IDU	665	33%	53%	10%	5%
MSM IDU	4,087	71%	16%	10%	3%
Lesbian IDU	55	45%	38%	11%	5%
Heterosexual contact with IDU	149	33%	44%	15%	9%
Children whose mothers are IDUs or mother's sex partners are IDUs	23	22%	43%	17%	17%

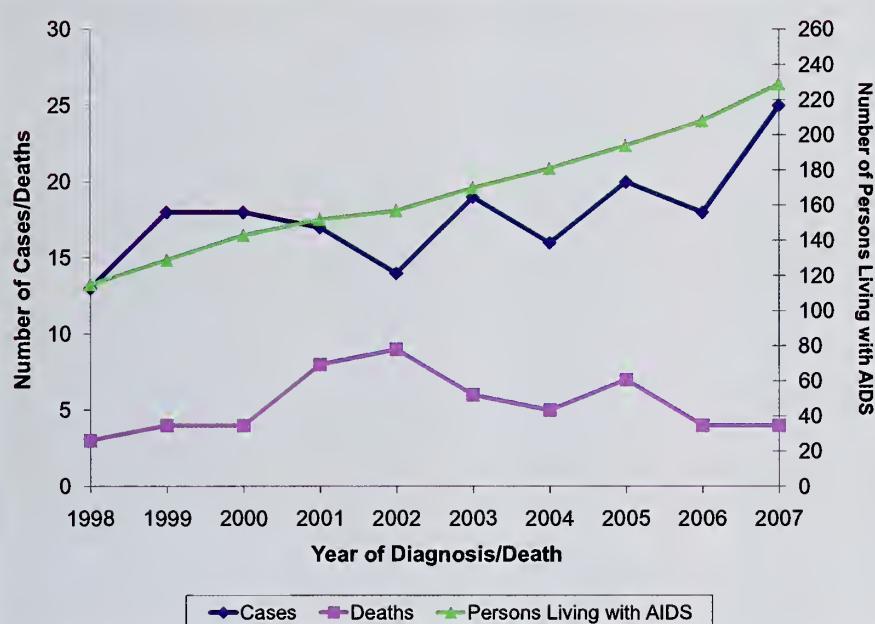
10

HIV/AIDS among Heterosexuals

AIDS surveillance data

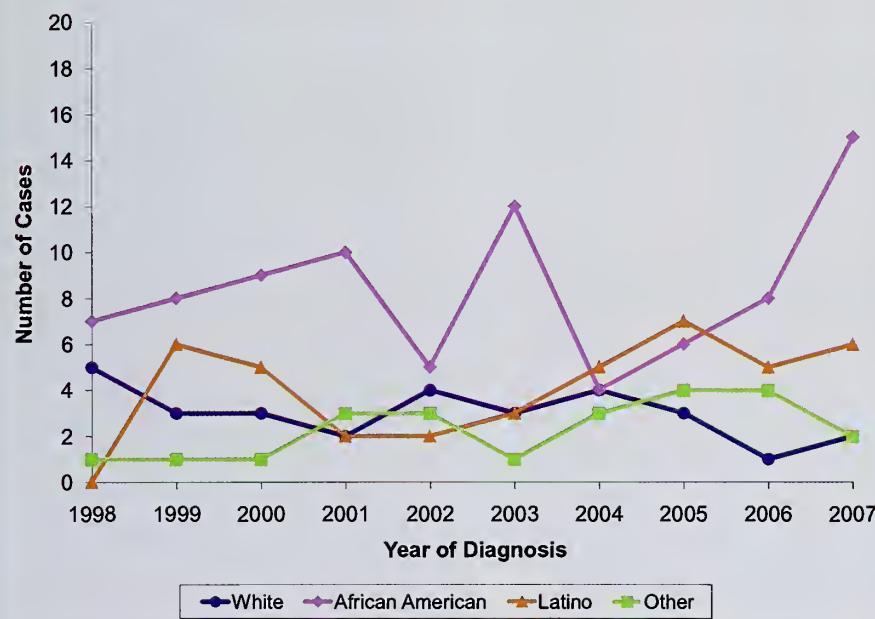
Between 1998 and 2007 there has been a slight increasing trend in the number of AIDS cases among persons who were infected with HIV through heterosexual contact (Figure 10.1). For deaths among non-IDU heterosexuals, the number ranged between 3 to 9 deaths per year during this time period. The number of non-IDU heterosexuals living with AIDS increased to 229 by December 31, 2007.

Figure 10.1 AIDS cases, deaths, and prevalence among heterosexuals, 1998-2007, San Francisco



Due to the small number of cases, trends in heterosexual AIDS cases by race/ethnicity fluctuate from year to year (Figure 10.2). Overall, African Americans accounted for the greatest number of heterosexual AIDS cases since 1998. Since 2004, the number of African American heterosexual AIDS cases diagnosed per year has increased steadily.

Figure 10.2 AIDS cases among heterosexuals by race/ethnicity, 1998-2007, San Francisco



The majority of heterosexually-acquired AIDS cases occurred in women (Table 10.1). Sex with an HIV-infected partner of unknown risk factor was the most frequent exposure category for both men and women.

Table 10.1 AIDS cases among heterosexuals by exposure category and gender, diagnosed through December 2007, San Francisco

Exposure Category	Men		Women	
	Number	%	Number	%
Sex with injection drug user	36	30%	113	40%
Sex with bisexual men	N/A	N/A	47	17%
Sex with HIV+ transfusion recipient	<5	-	<5	-
Sex with HIV+ persons of unknown risk	80	67%	119	42%

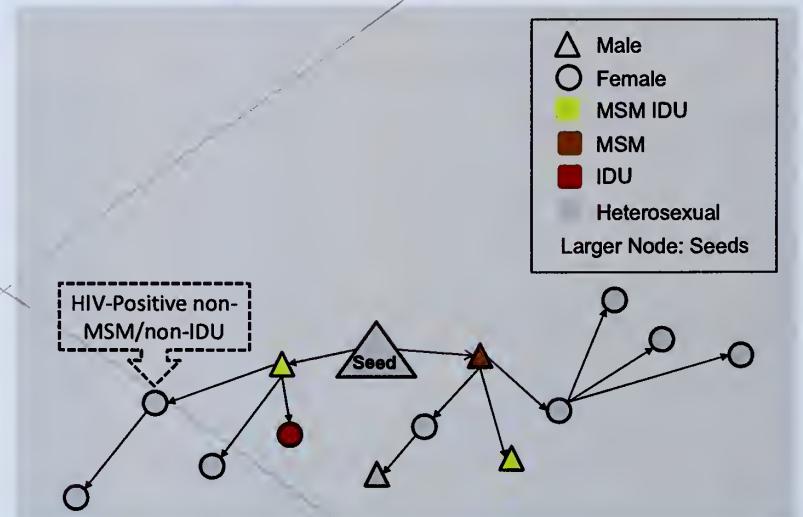
National HIV Behavioral Surveillance data

As part of the National HIV Behavioral Surveillance (NHBS), we conducted a targeted survey of heterosexuals living in census tracts that have had historically high levels of AIDS cases and the lowest income levels. "Heterosexual" was defined as having at least one opposite gender sexual partner in the past 12 months. Data from 494 persons living in these areas were collected using respondent-driven sampling (RDS), whereby eligible participants refer other participants from their social network.

Overall, eight persons tested positive for HIV antibodies; seven of whom were MSM or IDU. Only one HIV-positive person reported no risk group membership other than being heterosexual, yielding a HIV prevalence of 0.27% among heterosexuals in the target area.

Figure 10.3 shows the social network recruitment referral that included the only HIV-positive non-IDU woman. The data illustrate how HIV transmission to heterosexuals can be linked to networks that include MSM and IDU.

Figure 10.3 Recruitment Chain, Single Heterosexual HIV Positive, 2006, San Francisco



Sexually transmitted diseases among heterosexuals

Figure 10.4 shows the annual number of primary, secondary, and early latent cases of syphilis among heterosexual men in San Francisco from 1998 through 2007. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Compared to MSM, syphilis among heterosexual men remains relatively low in recent years.

Susan update please

Figure 10.4 Syphilis among heterosexual men, 1998-2007, San Francisco

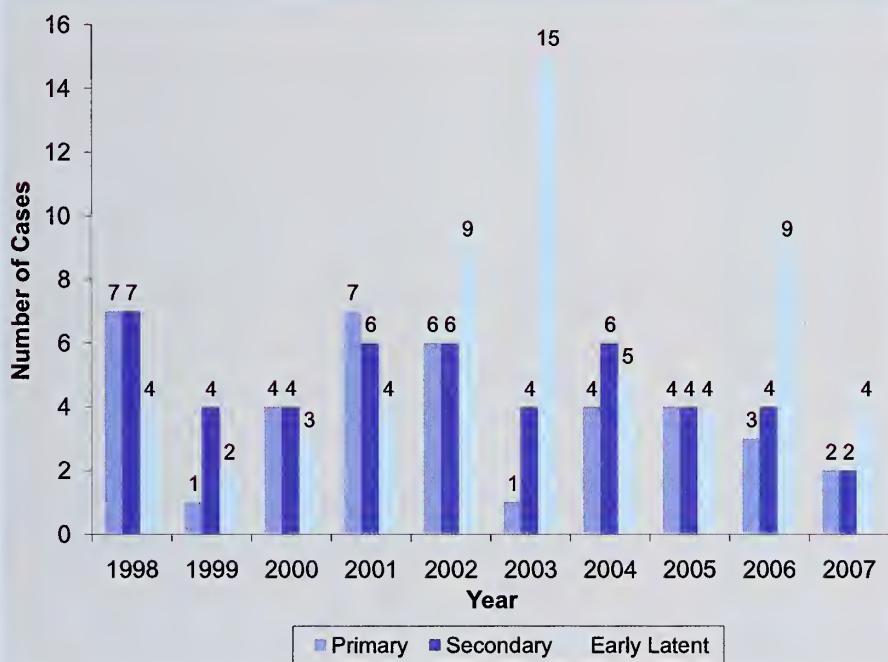
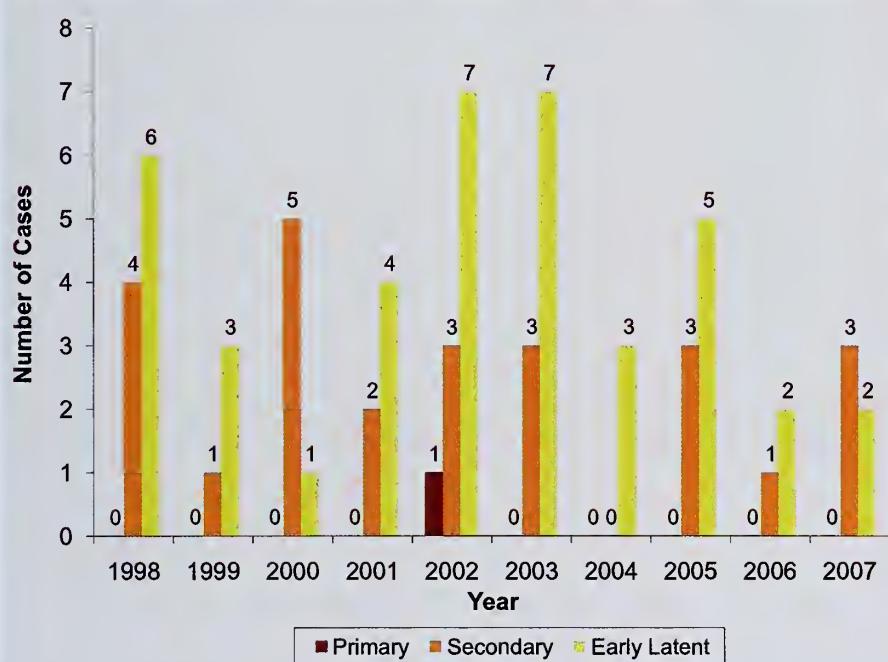


Figure 10.5 shows the annual number of primary, secondary, and early latent cases of syphilis among women in San Francisco from 1998 through 2007. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Among women, syphilis cases are low and stable in recent years.

Susan update please

Figure 10.5 Syphilis among women, 1998-2007, San Francisco

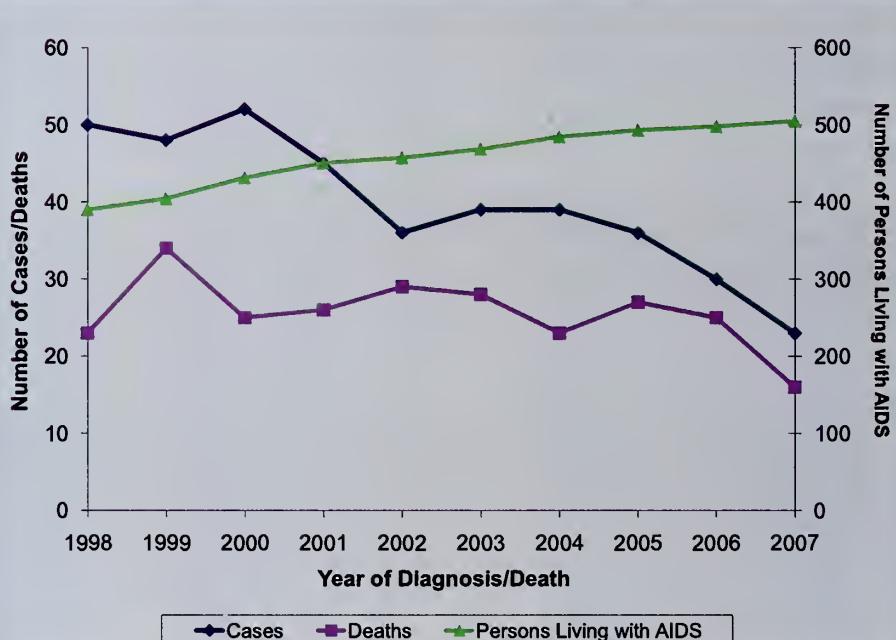


11

HIV/AIDS among Women

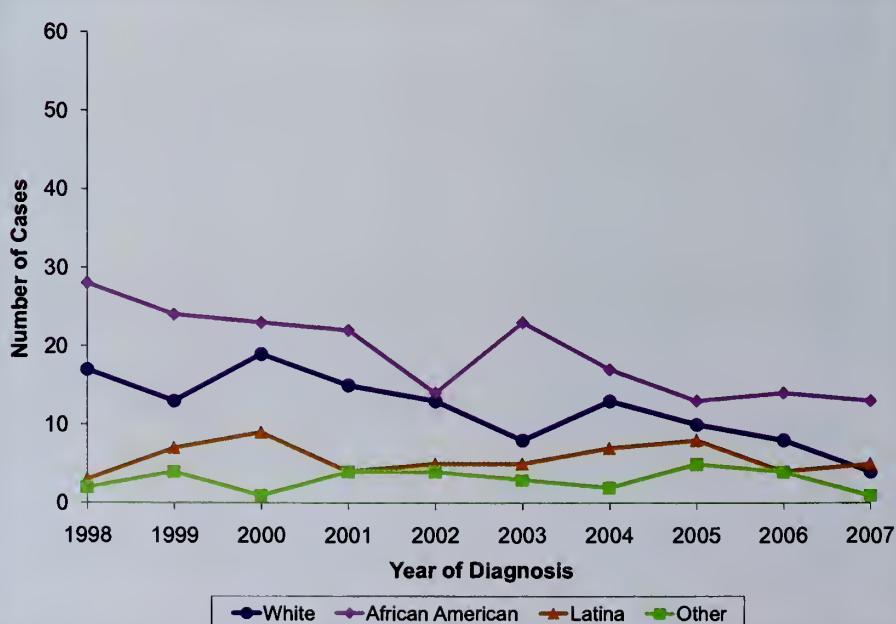
AIDS case numbers among women in San Francisco declined, while the number of deaths remained fairly stable from 1998 to 2006 (Figure 11.1). As of December 31, 2007 there were 505 women living with AIDS.

Figure 11.1 AIDS cases, deaths, and prevalence among women, 1998-2007, San Francisco



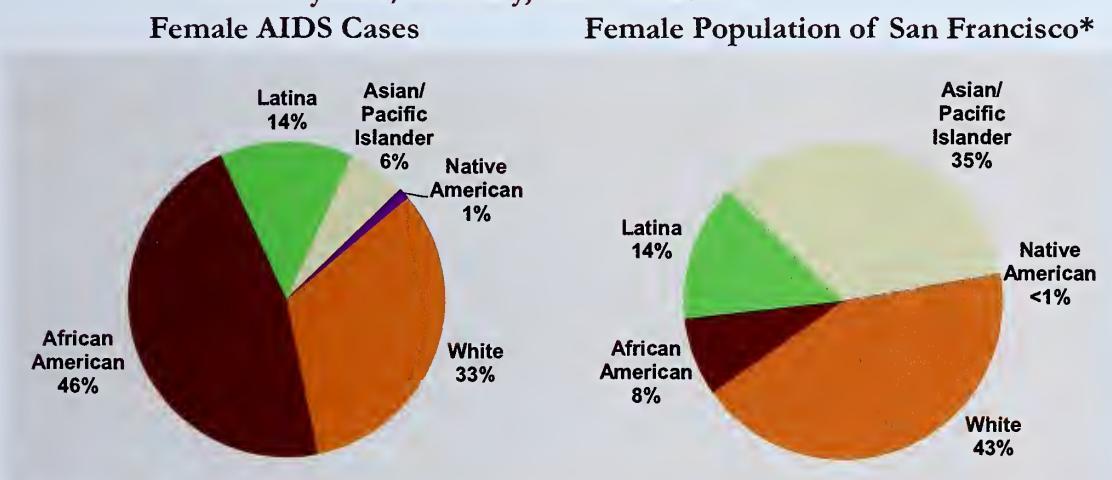
During 1998 to 2007, African American women represented the highest number of newly diagnosed female AIDS cases, and white women represented the second highest number of female AIDS cases (Figure 11.2).

Figure 11.2 Female AIDS cases by race/ethnicity, 1998-2007, San Francisco



African American women are more affected by AIDS than women of other race/ethnicities in San Francisco. Although African American women represent 8% of the female population, they account for 46% of the female AIDS cases in San Francisco (Figure 11.3).

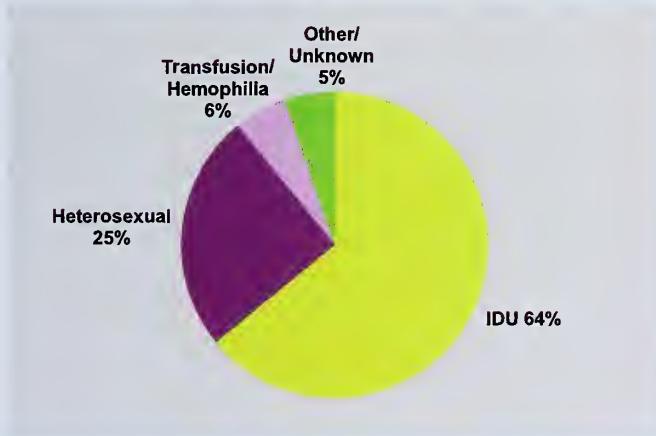
Figure 11.3 Female AIDS cases diagnosed through December 2007 and female population by race/ethnicity, San Francisco



* United States 2000 Census data.

Almost two-thirds of all female AIDS cases diagnosed in San Francisco acquired HIV infection through injection drug use (Figure 11.4). A quarter of all female AIDS cases in San Francisco acquired HIV infection through heterosexual contact.

Figure 11.4 Female AIDS cases diagnosed through December 2007 by exposure category, San Francisco



HIV/AIDS among Adolescents and Young Adults

Table 12.1 shows living HIV/AIDS cases diagnosed in San Francisco among adolescents (age 13-19) and young adults (age 20-24) as of December 31, 2007. There were 22 adolescents and 142 young adults living with HIV/AIDS. Among living adolescent cases, the majority were infected with HIV perinatally, male, and African American. Among living young adult cases, the majority were MSM, male, and white.

Local State + National data

Table 12.1 Living adolescent and young adult HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2007, San Francisco

	13-19 Years Old (N=22)	20-24 Years Old (N=142)
Exposure Category		
MSM	23%	69%
IDU	4%	4%
MSM IDU	0%	6%
Transfusion/Hemophilia	4%	1%
Heterosexual	0%	8%
Perinatal	64%	2%
Other/Unknown	4%	9%
Gender		
Male	59%	83%
Female	41%	11%
Transgender	0%	6%
Race/Ethnicity		
White	18%	37%
African American	32%	22%
Latino	27%	30%
Asian/Pacific Islander	14%	7%
Other/Unknown	10%	5%

13

HIV/AIDS among Children

HIV/AIDS surveillance data

As of December 31, 2007, a cumulative total of 38 pediatric AIDS cases (less than 13 years old and resided in San Francisco at time of diagnosis) had been reported. There were 14 pediatric HIV non-AIDS cases reported between 2002 and 2007. Of these pediatric HIV/AIDS cases, 28 were known to be alive as of December 2007, with many surviving beyond childhood. The majority of living pediatric HIV/AIDS cases are children of a high-risk or AIDS-diagnosed parent (Table 13.1). Sixty-four percent are female and 93% are children of color.

Table 13.1 Living pediatric HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2007, San Francisco

N= 28

Exposure Category

Child of high risk/AIDS parent	89%
Other/Unidentified	11%

Gender

Male	36%
Female	64%

Race/Ethnicity

White	7%
African American	29%
Latino	36%
Asian/Pacific Islander	14%
Other/Multirace	14%

Perinatal HIV data

Data on children with HIV in San Francisco are gathered through the Pediatric Spectrum of Disease (PSD) project. The PSD project was established in 1989 by the Centers for Disease Control and Prevention and collects data from eight areas throughout the United States. In Northern California, hospital surveillance for children under 13 years old infected with HIV or infants born to infected mothers has occurred at eight pediatric hospitals (including University of California at San Francisco and San Francisco General Hospital). Records from HIV positive pediatric patients cared for through the California Children's Services program, a state agency providing funding and case management for HIV-positive children, are also included in the PSD project. Data presented here include infants who were San Francisco residents and born to mothers documented to have HIV before delivery without a history of blood or blood product transfusion before 1985.

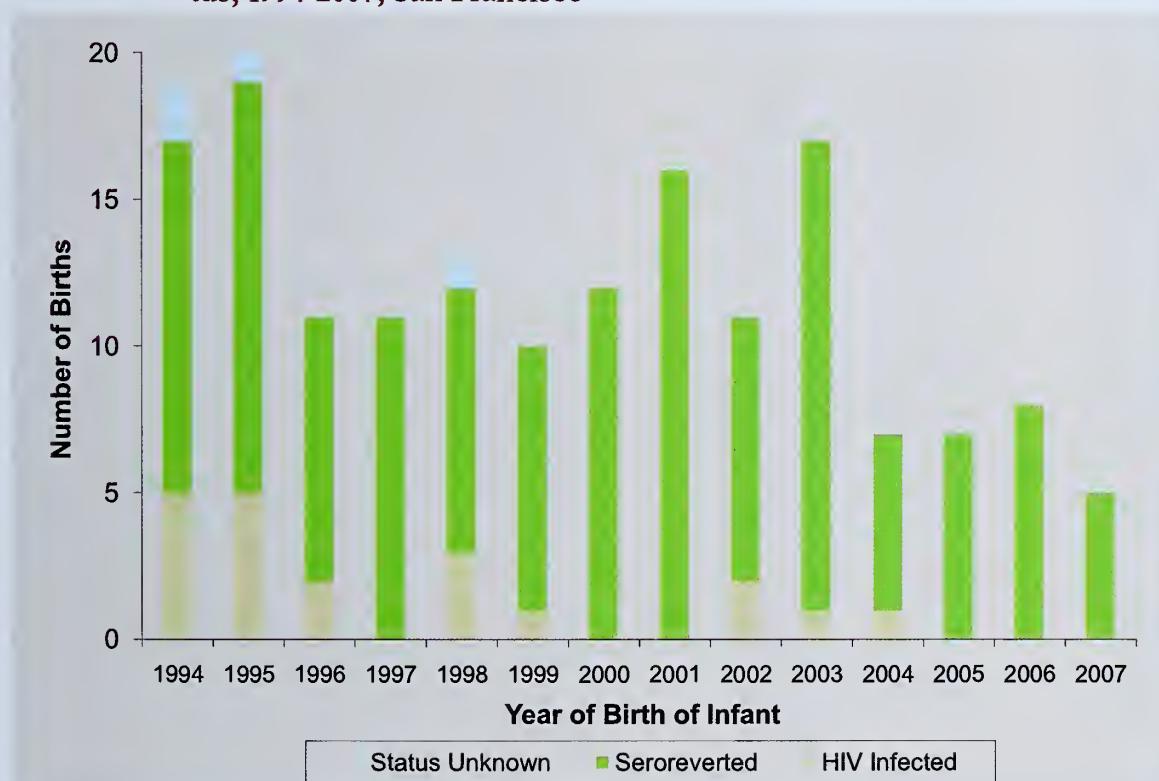
Through December 31, 2007, 305 infants were born to HIV-infected mothers who were residents of San Francisco (Table 13.2). Sixty-two (20%) of these infants were confirmed to be HIV infected, 232 (76%) seroreverted (were determined to be uninfected after maternal antibodies disappeared), and 11 (4%) were of unknown serostatus. Fifty percent of perinatally exposed infants were African American, while whites and Latinos each accounted for 20% and 18% of these infants respectively.

Table 13.2 Infants born to HIV-infected mothers by infant HIV status and race/ethnicity, December 2007, San Francisco

	N (%)
Total	305
Infant HIV Status	
HIV-infected	62 (20)
Seroreverted (HIV-)	232 (76)
Unknown	11 (4)
Race/Ethnicity	
White	61 (20)
African American	153 (50)
Latino	56 (18)
Asian/Pacific Islander	21 (7)
Other/Unknown	14 (5)

The number of perinatally exposed infants who were confirmed as HIV-infected has remained low since 1996 (Figure 13.1). Declines in perinatal transmission of HIV are due to the improved therapies for mothers throughout pregnancy and for infants to prevent perinatal transmission. In 2007, five infants born to HIV-infected mothers have been reported so far; all have seroreverted (i.e., were uninfected).

Figure 13.1 Infants born to HIV-infected mothers by year of birth and infant HIV status, 1994-2007, San Francisco



14

HIV/AIDS among Transgender Persons

Transgender status is determined through review of information in medical records. Information on transgender status has been collected since 1996. During 2002-2007, there were a total of 136 HIV non-AIDS and AIDS transgender cases diagnosed in San Francisco (Table 14.1). Compared to all HIV non-AIDS and AIDS cases diagnosed in the same time period, transgender HIV/AIDS cases were more likely to be non-white, injection drug users, and younger.

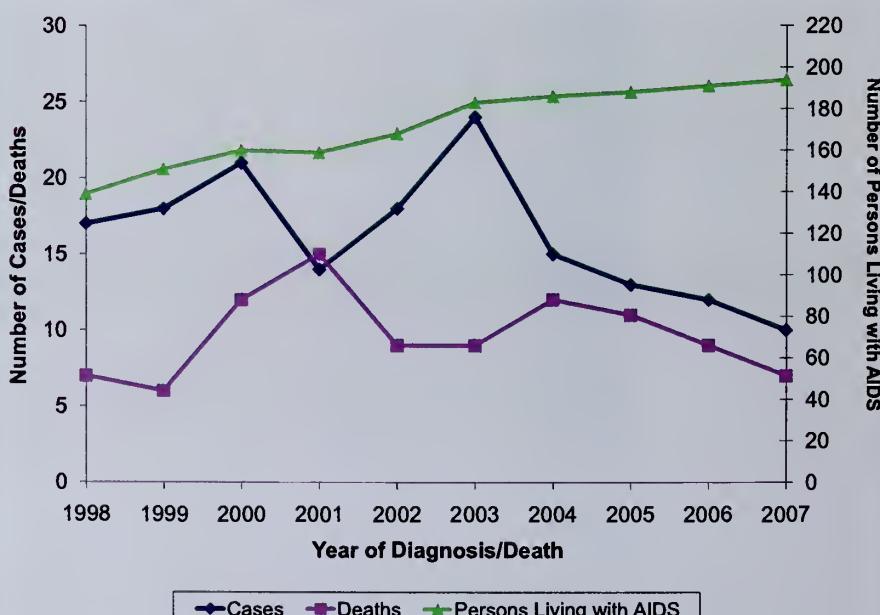
Table 14.1 Characteristics of transgender* HIV/AIDS cases compared to all HIV/AIDS cases diagnosed in 2002-2007, San Francisco

	Transgender HIV/AIDS Cases Diagnosed 2002-2007 (N=136)	All HIV/AIDS Cases Diagnosed 2002-2007 (N=4,774)
Race/Ethnicity		
White	21%	56%
African American	36%	16%
Latino	28%	18%
Asian/Pacific Islander	10%	6%
Other/Unknown	5%	4%
Injection Drug Use		
Yes	38%	21%
No	63%	79%
Age at Diagnosis		
13 - 29	32%	20%
30 - 39	32%	39%
40 - 49	26%	29%
50+	9%	12%

* See Technical Notes "Transgender Status."

The numbers of transgender AIDS cases and deaths are small and fluctuate by year (Figure 14.1). The number of living transgender AIDS cases continues to increase with 194 transgender AIDS cases as of December 31, 2007.

Figure 14.1 AIDS cases, deaths, and prevalence among transgender persons, 1998-2007, San Francisco



15

HIV/AIDS among Homeless Persons

A case is classified as homeless if, at the time of HIV or AIDS diagnosis, the medical record states that the patient is homeless or the patient's address is one of the following: (1) a known homeless shelter, (2) a health care clinic, or (3) a free postal address not connected to a residence ('general delivery'). Cases with missing information on residence were not classified as homeless.

Figure 15.1 shows a decline in homeless AIDS cases diagnosed between 1998 and 2005. In 2006 there was an increase in the number of new homeless AIDS cases diagnosed (44 cases). Since 1998, the proportion of homeless cases among all AIDS cases diagnosed per year ranged between 8% and 14%. For 2007, 9% of AIDS cases were homeless at the time of diagnosis.

Compared to all HIV/AIDS cases diagnosed in 2002 to 2007, persons who were homeless at their HIV/AIDS diagnosis (diagnosed in 2002 to 2007) were more likely to be women, African American, injection drug users, and younger (Table 15.1).

Figure 15.1 Number and percent of homeless AIDS cases by year of diagnosis, 1998-2007, San Francisco

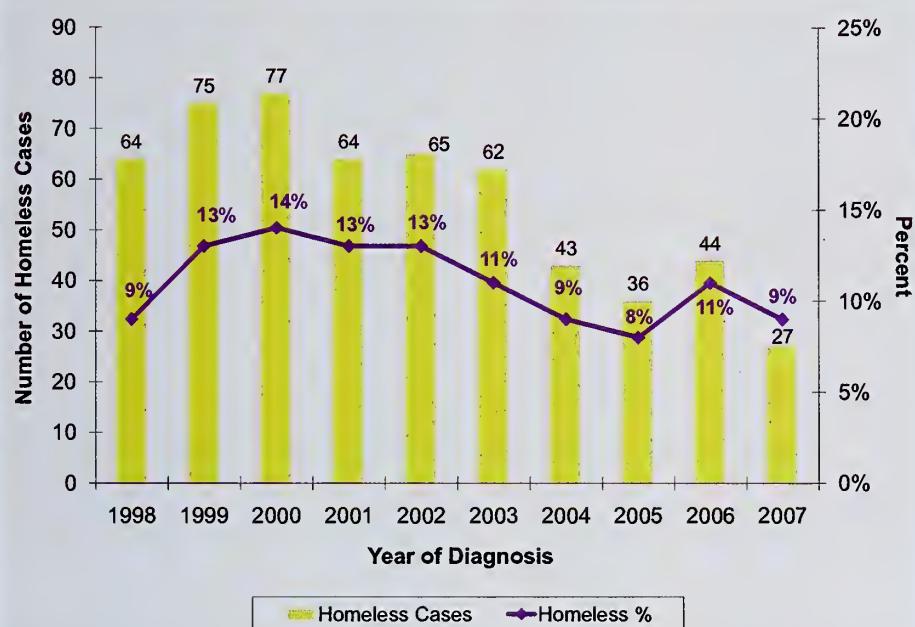


Table 15.1 Characteristics of homeless HIV/AIDS cases compared to all HIV/AIDS cases diagnosed in 2002-2007, San Francisco

	Homeless AIDS Diagnosed 2002-2007 (N=227)	AIDS Cases Diagnosed 2002-2007 (N=2,684)	All Homeless HIV non-AIDS Cases Diagnosed 2002-2007 (N=219)	All HIV non-AIDS Cases Diagnosed 2002-2007 (N=3,139)
Gender				
Male	83%	92%	85%	92%
Female	17%	8%	15%	8%
Race/Ethnicity				
White	45%	57%	47%	57%
African American	34%	18%	31%	16%
Latino	14%	18%	14%	17%
Other/Unknown	6%	7%	8%	11%
Exposure Category				
MSM	25%	64%	32%	69%
IDU	40%	13%	32%	9%
MSM IDU	29%	16%	24%	10%
Heterosexual	5%	4%	4%	3%
Other/Unidentified	2%	3%	8%	9%
Age at Diagnosis (years)				
0 - 19	1%	<1%	1%	1%
20 - 29	12%	9%	27%	21%
30 - 39	31%	34%	31%	41%
40 - 49	41%	37%	30%	27%
50+	15%	20%	11%	10%

There were 6,558 AIDS cases diagnosed between 1996 and 2006 and 641 (9.8%) were homeless at diagnosis (Table 15.2). Compared to housed persons, homeless persons with HIV/AIDS are more likely to be women or transgender, less than 30 years old, African American, injection drug users, to either have public health insurance or to be uninsured. Homeless persons were less likely to be aged 50 years or older and to be receiving antiretroviral therapies than were the non-homeless cases.

Table 15.2 Characteristics of persons diagnosed with AIDS between 1996 and 2006 by housing status at diagnosis, San Francisco

	Homeless AIDS (N=641)	Non-Homeless AIDS (N=5,917)
Gender		
Male	78%	91%
Female	15%	7%
Transgender	8%	3%
Age at Diagnosis (years)		
13-29	13%	9%
30-39	40%	40%
40-49	36%	34%
50+	12%	17%
Race/Ethnicity		
White	41%	62%
African American	39%	16%
Latino	17%	16%
Other	4%	6%
Exposure Category		
MSM	21%	69%
IDU	40%	11%
MSM IDU	33%	15%
Heterosexual/Other	6%	5%
Insurance Status		
Public	33%	20%
Private	1%	44%
None	64%	32%
Unknown	2%	3%
Initial AIDS Diagnosis		
Low CD4 count	78%	80%
Opportunistic illness	22%	20%
CD4 count at diagnosis (mean cells/mm³)	172	184
Received antiretroviral therapies		
Yes	71%	82%
No	29%	18%
Received prophylaxis against		
Pneumocystis jirovecii pneumonia		
Yes	65%	57%
No	35%	43%
Received prophylaxis against		
Mycobacterium avium complex		
Yes	27%	19%
No	73%	81%

Persons who were homeless at diagnosis had much worse survival than housed persons (Figure 15.2). Sixty-seven percent of persons who were homeless at the time of AIDS diagnosis survived five years compared with 81% of non-homeless.

Figure 15.2 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2006 by housing status at diagnosis, San Francisco



* See Technical Notes "AIDS Survival."

Death certificates list a single, underlying cause of death as well as multiple, contributory causes of death. Homeless persons with HIV disease suffer from additional conditions which put them at risk for death from causes other than HIV. Among persons who died with AIDS, a greater proportion of homeless persons died from conditions other than HIV. In large part, these other causes of death may be due to substance abuse (hepatitis, liver disease, septicemia) and mental illness. In contrast, housed persons who died from conditions other than HIV frequently died from chronic diseases such as heart disease and cancer.

Table 15.3 Multiple causes of death among persons diagnosed with AIDS between 1996 and 2005 by homeless status at diagnosis, San Francisco

Cause of death	Homeless Status at Diagnosis			
	Homeless	Non-Homeless		
	Number	(%)	Number	(%)
HIV/AIDS	156	(78)	905	(83)
Hepatitis	41	(21)	130	(12)
Liver disease	39	(20)	160	(15)
Septicemia	35	(18)	121	(11)
Mental illness	33	(17)	52	(5)
Heart disease	29	(15)	201	(18)
Pneumonia (non-AIDS related)	27	(14)	172	(16)
Non-AIDS cancer	12	(6)	139	(13)

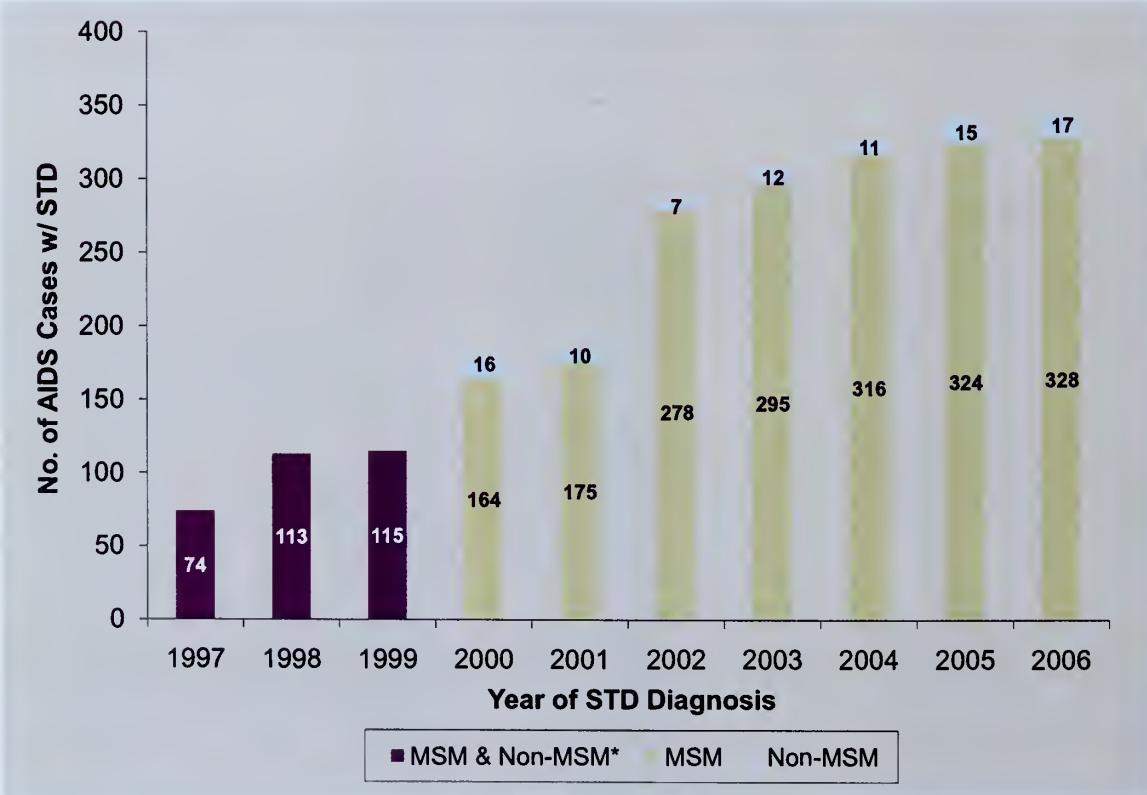
16

Sexually Transmitted Diseases among Persons with AIDS

The occurrence of STD diagnoses among persons living with AIDS is an important marker for sexual risk behavior and potential HIV transmission. Diagnosis of sexually transmitted diseases (STD) occurring among persons with AIDS was determined through a computerized match of the AIDS and STD case registries through 2006. A match was verified by name, date of birth, and gender. The STD registry included persons reported with gonorrhea, chlamydia, non-gonococcal urethritis, or infectious syphilis. Cases of STDs among persons with AIDS have steadily risen since 1997 with a dramatic increase in 2002 (Figure 16.1). This jump in STDs among persons with AIDS could be expected due to steep increases in male rectal gonorrhea (see Figure 8.5) and syphilis (see Figure 8.6), particularly among MSM, reported in 2002. All STDs occurred after the AIDS diagnosis, indicating unprotected sex among persons with known HIV infection.

Incidence of the various STDs in San Francisco HIV/AIDS cases

Figure 16.1 Number of AIDS cases diagnosed with an STD by year of STD diagnosis, 1997-2006, San Francisco



* Prior to 2000, data for MSM and non-MSM was not separated.

17

Late HIV Testing

We have been monitoring the trends in persons diagnosed late in the course of their HIV infection. Prior to the implementation of HIV case reporting, we determined the proportion of persons diagnosed with AIDS whose HIV diagnosis occurred within 12 months of their AIDS diagnosis. In this calculation, the numerator is the number of late testers and the denominator is persons with AIDS. The characteristics and trends in late testing are shown in Table 17.1.

With the addition of HIV case reporting in California, we are able to calculate the proportion of late testers among all persons reported with HIV. This includes persons initially reported with HIV who later developed AIDS, persons initially reported with AIDS, and persons reported with HIV and AIDS concurrently. In this analysis, the numerator is still the number of late testers and the denominator includes all persons reported with HIV/AIDS. This is the same denominator used in national estimates of late testing. The analysis of late testing using this methodology is shown in Table 17.2.

Table 17.1 Characteristics of late HIV testers among AIDS cases diagnosed between 2003 and 2006, San Francisco

	AIDS cases in 2003-2006 Number	Late testers among AIDS cases	
		Number	%
Total	1,905	680	36%
Gender			
Female	144	57	40%
Male	1,696	609	36%
Transgender	65	14	22%
Age at AIDS Diagnosis (Years)			
13 - 29	166	90	54%
30 - 39	648	235	36%
40 - 49	700	225	32%
50+	391	130	33%
Race/Ethnicity			
White	1,057	338	32%
African American	343	126	37%
Latino	376	156	41%
Other	129	60	47%
Exposure Category			
MSM	1,232	450	37%
IDU	245	85	35%
MSM IDU	305	65	21%
Heterosexual	73	45	62%
No Reported Risk/Other	50	35	70%
Country of Birth			
United States	1,534	517	34%
Outside of USA	263	137	52%
Unknown	108	26	24%

↑
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Our definition of late testing is based upon the earliest known date that an individual was diagnosed with HIV. We use the earliest date of a laboratory report of a confirmed positive HIV antibody, viral load, or CD4 test, starting date of antiretroviral therapy, or the patient's self report of first HIV positive test.

Using AIDS cases only as the denominator we find that 36% of persons diagnosed with AIDS between 2003 and 2006 were late testers. When we use all HIV/AIDS cases as the denominator, we find that 24% of cases were late testers. This proportion is lower than the national estimate in that 38% of HIV cases diagnosed in 2005 progressed to AIDS within 12 months after HIV diagnosis. The lower percentage of late testers (or persons who developed AIDS less than 12 months after HIV diagnosis) among HIV cases in San Francisco compared to the US data may reflect early testing and diagnosis of HIV and receipt of care and treatment in the HIV-infected population. It can also be a result of our effort to ascertain earlier date of HIV diagnosis which resulted in fewer cases being classified as late testers.

Table 17.2 Characteristics of persons diagnosed with HIV in 2003-2006 who developed AIDS within 12 months of HIV diagnosis, San Francisco

	HIV cases diagnosed in 2003-2006 Number	HIV cases developed AIDS within 12 months of HIV diagnosis Number	HIV cases developed AIDS within 12 months of HIV diagnosis %
Total	2,790	674	24%
Gender			
Female	216	56	26%
Male	2,509	607	24%
Transgender	65	11	17%
Age at HIV Diagnosis (Years)			
13-29	592	93	16%
30-39	1,099	232	21%
40-49	774	224	29%
50+	325	125	38%
Race/Ethnicity			
White	1,512	335	22%
African American	451	129	29%
Latino	514	153	30%
Other	313	57	18%
Exposure Category			
MSM	1,885	443	24%
IDU	262	84	32%
MSM IDU	305	66	22%
Heterosexual	117	46	39%
No reported risk/Other	221	35	16%
Country of Birth			
United States	2,126	517	24%
Outside of USA	387	131	34%
Unknown	277	26	9%

Late testers from both analyses were more likely to be non white, heterosexual, and to be immigrants. There are two notable differences in the analyses. When using AIDS cases as the denominator, younger persons are more likely to be late testers. The actual number of late testers by age group is similar but there are far fewer young persons that were diagnosed with AIDS than were diagnosed with HIV. Late testing occurred more frequently among injection drug users (IDU) when using HIV/AIDS cases as the denominator. The association of older persons and IDU with late testing is consistent with the finding of lower CD4 at time of HIV diagnosis among these groups. The higher proportion of older persons with HIV that developed AIDS observed in Table 17.2 may also reflect age as a risk factor for AIDS progression.

18**Access to Care among Persons with HIV/AIDS****Estimate of unmet need for HIV medical care**

An analysis was conducted to estimate unmet need for primary care for persons living with HIV/AIDS in San Francisco. Persons with HIV/AIDS were considered to have a met need for care if they had received antiretroviral therapy or had at least one CD4 or viral load test during the 12-month period from July 1, 2005 through June 30, 2006. Care information was obtained from laboratory reporting of viral load and CD4 test results, medical record chart reviews, and data from Medi-Cal, the AIDS Drug Assistance Program (ADAP), and Kaiser Permanente Northern California. The unmet need estimates were for persons who have been diagnosed with HIV/AIDS and do not include undiagnosed cases or those infected individuals who are not aware of their infections.

We estimated that there were 10,028 persons living with AIDS (PLWA) and 9,061 persons living with HIV non-AIDS (PLWH) in San Francisco during July 1, 2005 through June 30, 2006. A total of 943 (9%) PLWA and 2,889 (32%) PLWH did not receive primary medical care during that time period (Table 18.1). Among PLWA, unmet need was similar across the demographic categories examined. Among PLWH, persons aged 20-29 years old and IDU had a greater percentage of unmet need.

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Table 18.1 Unmet need by demographic and risk characteristics among persons living with HIV/AIDS*, July 2005-June 2006, San Francisco

	Persons with AIDS N=10,028		Persons with HIV/non-AIDS N=9,061		ALL HIV/AIDS N=19,089	
	with unmet need Number	(%)	with unmet need Number	(%)	with unmet need Number	(%)
Total	943	(9)	2,889	(32)	3,832	(20)
Gender						
Male	894	(9)	2,656	(32)	3,550	(20)
Female	49	(8)	233	(30)	282	(20)
Race/Ethnicity						
White	623	(10)	1,717	(31)	2,340	(19)
African American	144	(10)	479	(34)	623	(22)
Latino	136	(9)	401	(32)	537	(19)
Asian/Pacific Islander	36	(8)	135	(29)	171	(19)
Other	4	(5)	157	(44)	161	(36)
Age in Years (as of 06/30/2006)						
0 - 19	0	(0)	25	(34)	25	(21)
20 - 29	16	(9)	346	(47)	362	(39)
30 - 39	168	(11)	905	(38)	1,073	(27)
40 - 49	430	(10)	1,032	(29)	1,462	(19)
50 - 59	245	(8)	472	(27)	717	(15)
60+	84	(9)	109	(21)	193	(13)
Exposure Category						
MSM	777	(11)	1,912	(29)	2,689	(19)
IDU	37	(4)	277	(43)	314	(20)
MSM IDU	55	(4)	241	(28)	296	(13)
Heterosexual	30	(11)	92	(37)	122	(23)
Other/Unidentified	43	(19)	367	(54)	410	(45)

* Includes both San Francisco residents and nonresidents who were diagnosed with HIV/AIDS in San Francisco.

Assessing access to medical care using CD4 tests as a marker for care

Despite widespread efforts to promote HIV testing, prevention and care, a significant percentage of HIV infected individuals are not receiving or accessing care early in their infection. We assessed receipt of medical care after HIV diagnosis among persons aged 13 years and older diagnosed with HIV between 2004 and 2006 in San Francisco using initial CD4 test as a marker for entry into medical care. The majority (83%) of persons diagnosed with HIV during this time period received medical care within 12 months of their HIV diagnosis (Table 18.2). The median of the initial CD4 counts within 12 months of diagnosis was 435 cells/ μ L. The proportion of persons receiving a CD4 test and the level of initial CD4 counts in San Francisco are significantly higher than previously observed nationwide (56% receiving a CD4 test and median CD4 counts about 170 among US cases diagnosed during 2001-2003 in 33 states). Although this may indicate higher care seeking patterns and early access to care in San Francisco, the difference may also be seen as more complete ascertainment of CD4 test results at time of HIV diagnosis.

Certain subgroups were less likely to access care within 12 months after diagnosis than others, including persons with HIV non-AIDS, non whites, persons reported without a risk, and those between 13 and 29 years of age. Lower initial CD4 count is a reflection of late testing or delayed entry into care. People diagnosed with AIDS, non whites, injection drug users, heterosexuals, and persons over 50 years of age had a lower initial CD4 count.

Table 18.2 Percent of HIV cases diagnosed between 2004 and 2006 receiving at least one CD4 test within 12 months of diagnosis and the median of initial CD4 counts, San Francisco

	Number	Percent received at least one CD4 test within 12 month of diagnosis	Median of initial CD4 counts (cells/ μ L)
Total	2,227	83%	435
HIV disease status			
HIV infection (not AIDS)	1,524	76%	535
Concurrent HIV and AIDS diagnosis*	352	99%	108
AIDS diagnosed \geq 1 month after HIV diagnosis	351	95%	306
Gender			
Male	2,071	83%	432
Female	156	81%	498
Race/Ethnicity			
White	1,240	87%	462
African American	338	80%	388
Latino	420	78%	350
Asian/Pacific Islander	136	83%	392
Other/Unknown	93	57%	458
Exposure category			
MSM	1,560	85%	436
IDU	184	83%	404
MSM IDU	242	84%	445
Heterosexual	95	87%	305
Other/No reported risk	146	57%	471
Age at HIV diagnosis (years)			
13 - 29	449	78%	472
30 - 39	862	84%	438
40 - 49	642	83%	420
50+	274	87%	340

* AIDS was diagnosed in the same month and year of HIV diagnosis.

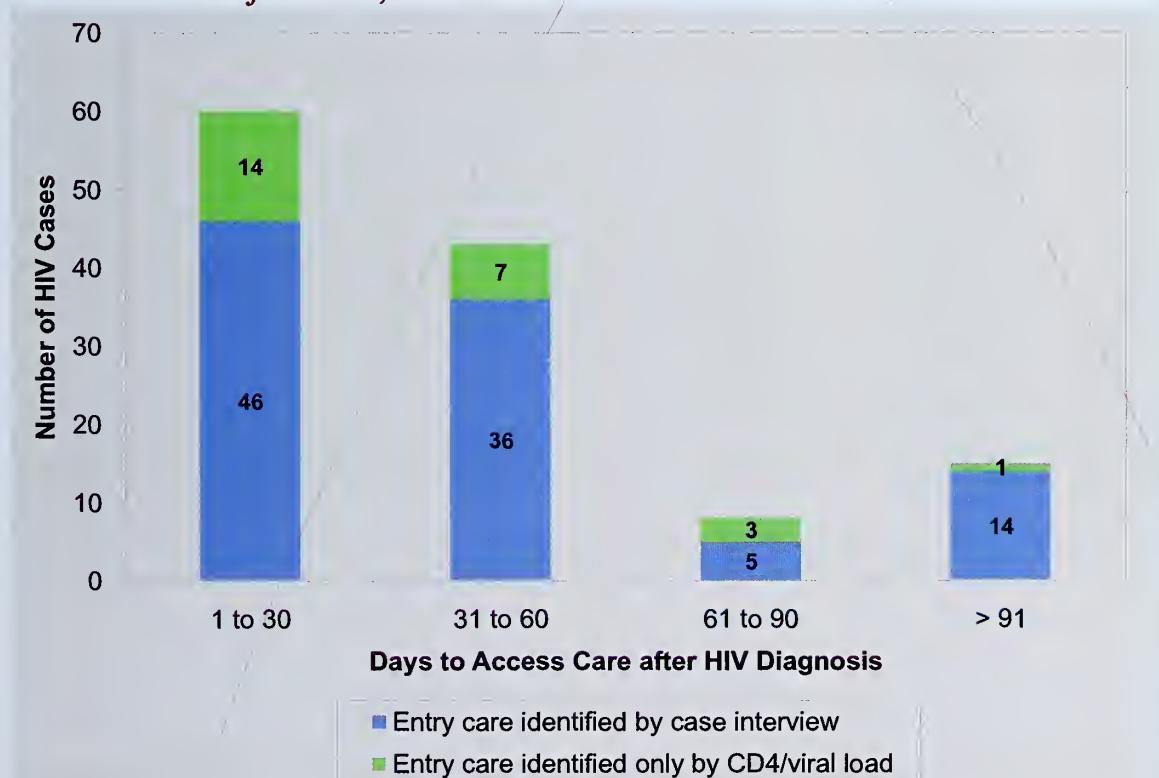
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Monitoring entry into care of newly diagnosed HIV persons

Early linkage to care of HIV infected patients is associated with better clinical and public health outcomes. Collecting CD4 T cell count and HIV plasma viral load is routinely performed on the first clinical visit after HIV diagnosis. Therefore, the presence of these laboratory tests can be used as surrogates for entry into HIV care.

San Francisco Department of Public Health (SFDPH) performs HIV case contact and referral in patients newly diagnosed with HIV at San Francisco's municipal STD clinic, the county hospital and affiliated SFDPH clinics. Between July 1, 2006 and June 30, 2007, 160 new HIV infected patients (who did not have a CD4 test on the same day of HIV testing) were diagnosed at these SFDPH testing facilities. Of the 160 newly diagnosed HIV cases, 121 were interviewed by SFDPH staff and 101 of the interviewed cases were confirmed to have accessed HIV care by self-report or by a health care provider. In addition, 25 cases were confirmed to be in care by the presence of CD4 or HIV viral load tests. Out of the 126 cases with confirmed entry to care, 111 (88%) entered care within the first 3 months after diagnosis (Figure 18). Cases interviewed by a SFDPH staff appear more likely to have entry into care within the first 3 months after HIV diagnosis, suggesting the benefit of case management in increased and shorter time to access care after HIV diagnosis.

Figure 18.1 Time to entry into care among HIV cases diagnosed between July 2006 and June 2007, San Francisco

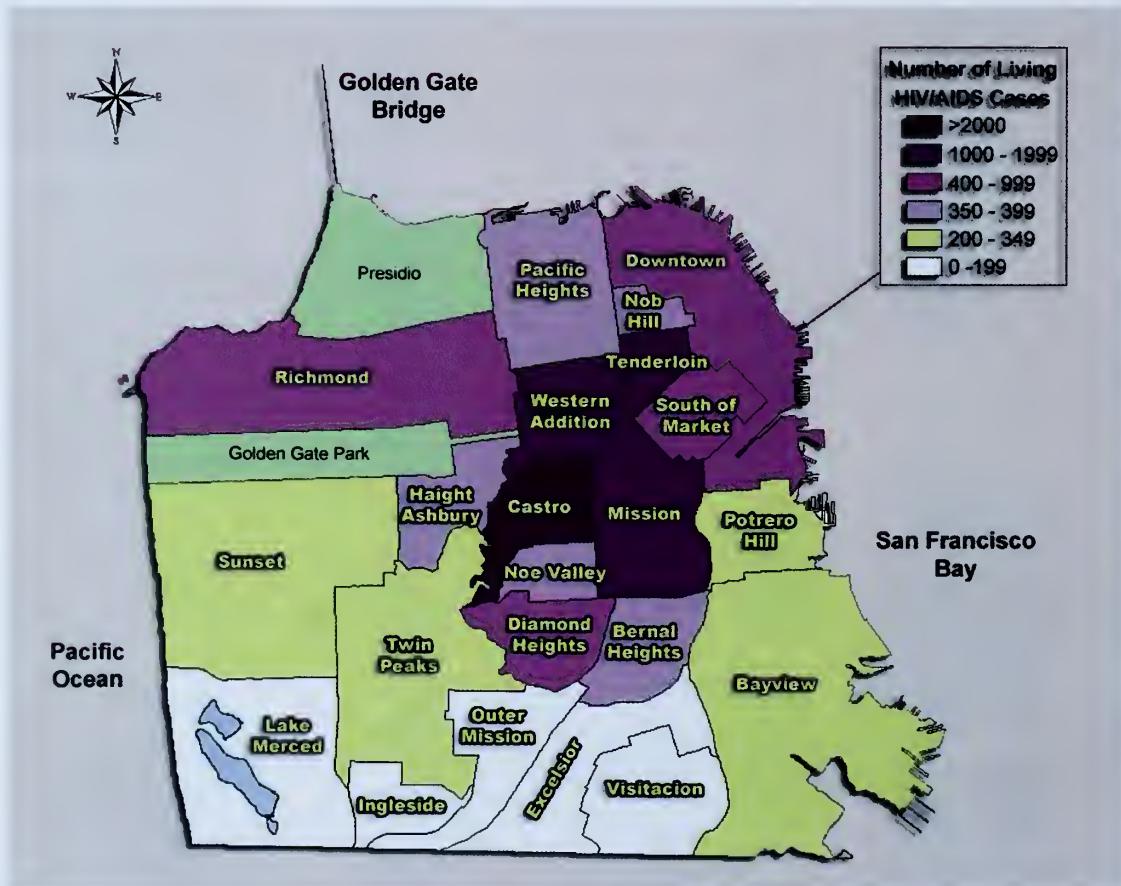


19

Geographic Distribution of HIV/AIDS

Map 19.1 shows the geographic distribution of persons living with HIV/AIDS by neighborhoods in San Francisco. Data include persons who were residents of San Francisco at the time of either their HIV or AIDS diagnosis and who were known to be alive on December 31, 2007. The most severely affected neighborhoods are the Castro, Tenderloin, Western Addition and Mission. The adjacent areas including South of Market, Nob Hill, Haight Ashbury, Noe Valley, Diamond Heights and Bernal Heights also have large numbers of persons living with HIV/AIDS.

Map 19.1 Distribution of persons living with HIV/AIDS, December 2007, San Francisco





Technical Notes

HIV/AIDS Surveillance Methods

San Francisco HIV/AIDS cases are reported primarily through active surveillance activities in which public health personnel review laboratory and pathology reports and medical records to identify cases and complete the case report forms. HIV/AIDS cases are also identified through passive reporting, review of death certificates, validation studies using secondary data sources such as hospital billing records or other disease registries, and reports from other health departments. The surveillance system is evaluated regularly for completeness, timeliness, and accuracy. AIDS case reporting has been found to be very complete (over 95%) while HIV case reporting is less complete due to an immature reporting system.

Publications of our HIV/AIDS data include only persons who were residents of San Francisco at the time they were diagnosed with HIV/AIDS. Our data also include San Francisco residents who were diagnosed in other jurisdictions. Persons diagnosed in San Francisco who resided in other jurisdictions at time of their HIV/AIDS diagnosis were excluded from the reports.

AIDS Incidence Rates

Annual race-specific rates are calculated as the number of cases diagnosed for a particular race/ethnic group during each year divided by the population for that race/ethnicity, multiplied by 100,000. These rates are calculated separately for males and females. The annual populations are not available for transgenders. Population denominators for the years 1998-2007 are obtained from the State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990-1999 and 2000-2050 data files, May 2004 (www.dof.ca.gov).

AIDS Survival

Survival was calculated as the time between the date of initial AIDS diagnosis and the date of death. This includes persons with at least one low CD4 (count<200 or percent<14%) and persons diagnosed with AIDS opportunistic illnesses. The follow-up information of cases was obtained through retrospective and prospective reviews of laboratory records and medical charts. Dates of death were obtained through review of local death certificates, reports from the State Office of AIDS, and matches with the National Death Index (NDI). The most recent NDI match included deaths that occurred through December 31, 2005. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 2005, whichever was more recent.

Causes of Death

Cause of death information on death certificates is coded using the International Classification of Diseases, 10th revision (ICD-10) for deaths occurring in 1999 or after, and the 9th revision (ICD-9) for deaths occur-

ring prior to 1999. These codes are then processed and evaluated using a computerized system to determine the underlying and contributory causes of death (www.cdc.gov/nchs/about/major/dvs/im.htm). We obtained the ICD coded causes of death from the California multiple-cause-of-death computer tape for persons with AIDS who died prior to 1996. For AIDS deaths that occurred in 1996 and after, the cause of death information was obtained through matches with the National Death Index. Deaths attributable to HIV infection or AIDS are coded as 042-044 under ICD-9 and B20-B24 under ICD-10. In addition, the AIDS opportunistic illnesses, if listed on death certificates, are included in the category of 'HIV/AIDS' cause of death.

Grouping of Data Categories

Data regarding certain racial/ethnic or risk categories are grouped together when the number of persons with HIV/AIDS in that particular group is small and/or does not present significant trends. For example, "Other" in the Race/Ethnicity breakdown represents Asian/Pacific Islander, Native American and people of mixed race. Whenever possible, this report presents the expanded race/ethnicity categories rather than aggregating into the group "Other". The label "Other" in the Exposure Category breakdown may include transfusion recipients, hemophiliacs, heterosexuals, persons acquiring AIDS perinatally, or persons of unidentified risk

Transgender Status

In September 1996, the San Francisco Department of Public Health began noting transgender status when this information is contained in the medical record. Transgender individuals are listed as either male-to-female or female-to-male. The majority of transgender HIV/AIDS cases are male-to-female. Please note that there are several limitations of our transgender data. We believe that our report likely underestimated the number of transgender persons affected by HIV/AIDS because data collected for HIV/AIDS reporting are derived from the medical record. Consequently, information that may be discussed with the health care provider but not recorded in the medical record is generally not available for the purposes of HIV/AIDS case reporting. Because information about transgender status was not collected in a uniform way until September 1996, we have limited data on transgender prior to this, and therefore cannot perform valid time trend analysis for this group.

D

Data Tables

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2007, San Francisco 3

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Cases	3	26	99	274	557	859	1236	1629	1762	2162
Deaths	0	8	32	111	273	534	807	877	1038	1275
Persons Living with AIDS	3	21	88	251	535	860	1289	2041	2765	3652

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Cases	2048	2284	2327	2074	1787	1562	1082	808	694	580
Deaths	1364	1505	1641	1599	1592	1483	987	422	400	355
Persons Living with AIDS	4336	5115	5801	6276	6471	6550	6645	7031	7325	7550

	2000	2001	2002	2003	2004	2005	2006	2007
Cases	551	504	493	549	470	450	413	309
Deaths	348	322	322	301	304	315	213	184
Persons Living with AIDS	7753	7935	8106	8354	8520	8655	8855	8980

Figure 2.1 Number of AIDS cases by race/ethnicity, 1998-2007, San Francisco . . . 7

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	445	340	320	293	294	282	263	262	235	191
African American	141	105	111	100	86	104	77	79	76	55
Latino	76	103	88	70	75	120	102	81	71	45
Other	32	32	32	41	38	43	28	28	31	18

Figure 2.2 Male annual AIDS incidence rates per 100,000 population by race/ethnicity, 1998-2007, San Francisco 8

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	236	179	161	147	147	141	128	131	116	95
African American	348	243	253	238	220	246	187	206	196	129
Latino	125	160	129	106	109	181	159	118	109	64
Other	24	23	23	28	25	31	19	17	20	12

Figure 2.3 Female annual AIDS incidence rates per 100,000 population by race/ethnicity, 1998-2007, San Francisco 8

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	11	8	12	9	7	5	8	6	5	2
African American	86	75	72	69	44	74	56	43	47	44
Latina	6	14	17	8	10	10	14	16	8	10
Other	2	3	1	3	3	2	1	4	3	1

Figure 2.4 Number of male AIDS cases by exposure category, 1998-2007, San Francisco 9

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
MSM	434	353	327	303	299	348	302	274	263	192
IDU	59	48	53	42	43	58	27	39	26	24
MSM IDU	128	93	86	76	84	62	70	70	62	42
Other	6	20	12	24	14	18	17	18	20	18

Figure 2.5 Number of female AIDS cases by exposure category, 1998-2007, San Francisco 9

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
IDU	34	34	36	30	23	25	28	19	20	9
Heterosexual	12	12	14	10	9	12	7	14	8	13
Other	4	2	2	5	3	2	4	3	2	1

Figure 5.2 Leading causes of death among San Francisco male residents aged 25-54 years, 2000-2005 23

	2000	2001	2002	2003	2004	2005
HIV/AIDS	162	162	145	140	127	114
Accident	113	113	94	95	78	92
Heart disease	80	91	104	107	75	82
Non-AIDS cancer	107	109	90	89	84	79
Mental disorder	35	50	50	47	59	58
Suicide	42	43	42	57	44	41
Homicide	20	26	19	27	34	34
Liver disease	34	37	24	26	22	28
Cerebrovascular	20	12	15	15	18	17
COPD	14	13	10	9	4	10

Figure 5.3 Leading causes of death among San Francisco female residents aged 25-54 years, 2000-2005 24

	2000	2001	2002	2003	2004	2005
Non-AIDS cancer	69	69	69	78	81	80
Accident	27	37	22	27	30	31
Heart disease	32	27	31	30	23	28
Mental disorder	10	7	12	16	8	23
HIV/AIDS	25	24	25	28	23	20
Cerebrovascular	8	2	11	13	5	14
Suicide	9	15	9	14	13	11
Liver disease	5	9	13	4	7	5
Homicide	5	11	6	4	2	4
COPD*	10	5	6	6	7	3

Figure 5.4 Leading causes of death rates per 100,000 population among San Francisco male residents aged 25-54 years by race/ethnicity, 2005 25

	White	African American	Latino
HIV/AIDS	55	170	46
Heart disease	27	147	25
Non-AIDS cancer	24	108	6
Accident	40	154	25

Figure 5.5 Leading causes of death rates per 100,000 population among San Francisco male residents aged 15-64 years by age group, 2005 25

	15-19	20-24	25-34	35-44	45-54	55-64
HIV/AIDS	0	0	7	51	108	74
Heart Disease	0	0	4	23	99	222
Accident	7	12	20	33	77	94
Non-AIDS Cancer	0	6	6	22	94	311
Mental Disorder	7	0	3	21	63	64
Suicide	7	12	20	13	77	20

Figure 7.1 Trends in insurance status among persons with AIDS by gender, 2002-2007, San Francisco 28

Male	2002	2003	2004	2005	2006	2007
Public	22%	22%	25%	31%	25%	29%
Private	42%	44%	46%	43%	45%	44%
None	33%	33%	27%	24%	27%	24%

Female	2002	2003	2004	2005	2006	2007
Public	40%	56%	64%	53%	70%	78%
Private	11%	10%	8%	22%	13%	13%
None	43%	31%	26%	25%	17%	9%

Transgender	2002	2003	2004	2005	2006	2007
Public	22%	38%	67%	62%	75%	40%
Private	17%	4%	0%	0%	8%	0%
None	56%	54%	33%	38%	17%	60%

Figure 8.1 AIDS cases, deaths, and prevalence among MSM 1998-2007, San Francisco, 30

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cases	579	464	432	393	400	434	387	357	337	243
Deaths	323	284	283	249	249	231	232	237	167	139
Persons Living with AIDS	6433	6613	6762	6906	7057	7260	7415	7535	7705	7809

Figure 8.2 AIDS cases among MSM by race/ethnicity, 1998-2007, San Francisco . . 30

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	402	296	282	258	260	248	241	226	211	168
African American	78	58	52	48	42	52	39	45	42	23
Latino	72	83	71	56	67	102	86	66	59	37
Other	27	27	27	31	31	32	21	20	25	15

Figure 8.3 Percent of MSM reporting unprotected anal intercourse in the last six months by self-reported HIV status, the Stop AIDS Project, 1999-2007, San Francisco 31

	1999	2000	2001	2002	2003	2004	2005	2006	2007
HIV Positive	42%	46%	51%	45%	53%	54%	46%	57%	67%
HIV Negative	32%	36%	37%	32%	37%	33%	37%	44%	43%

Figure 8.4 Percent of MSM reporting unprotected anal intercourse in the last six months with at least one partner of unknown HIV status by self-reported HIV status, the Stop AIDS Project, 1999-2007, San Francisco 31

	1999	2000	2001	2002	2003	2004	2005	2006	2007
HIV Positive	25%	25%	31%	27%	28%	21%	9%	13%	18%
HIV Negative	15%	17%	20%	16%	8%	4%	12%	10%	9%

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	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Primary	3	3	13	45	96	105	118	70	75	60
Secondary	2	19	27	71	193	213	205	147	143	122
Early Latent	4	9	12	36	151	158	179	159	151	135

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	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cases	93	82	91	72	67	83	55	58	46	33
Deaths	66	64	52	60	58	60	59	62	38	38
Persons Living with AIDS	689	707	746	758	767	790	786	782	790	785

Figure 9.2 AIDS cases among non-MSM IDU by race/ethnicity, 1998-2007, San Francisco 35

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	35	37	33	29	26	31	16	28	19	14
African American	52	37	48	36	36	36	29	24	20	16
Latino	4	5	8	5	2	12	8	5	6	2
Other	2	3	2	2	3	4	2	1	1	1

Figure 10.1 AIDS cases, deaths, and prevalence among heterosexuals, 1998-2007, San Francisco 37

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cases	13	18	18	17	14	19	16	20	18	25
Deaths	3	4	4	8	9	6	5	7	4	4
Persons Living with AIDS	115	129	143	152	157	170	181	194	208	229

Figure 10.2 AIDS cases among heterosexuals by race/ethnicity, 1997-2006, San Francisco 37

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	5	3	3	2	4	3	4	3	1	2
African American	7	8	9	10	5	12	4	6	8	15
Latino	0	6	5	2	2	3	5	7	5	6
Other	1	1	1	3	3	1	3	4	4	2

Figure 11.1 AIDS cases, deaths, and prevalence among women, 1998-2007, San Francisco 40

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cases	50	48	52	45	36	39	39	36	30	23
Deaths	23	34	25	26	29	28	23	27	25	16
Persons Living with AIDS	390	404	431	450	457	468	484	493	498	505

Figure 11.2 Female AIDS cases by race/ethnicity, 1998-2007, San Francisco 40

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	17	13	19	15	13	8	13	10	8	4
African American	28	24	23	22	14	23	17	13	14	13
Latina	3	7	9	4	5	5	7	8	4	5
Other	2	4	1	4	4	3	2	5	4	1

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	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
HIV Infected	5	5	2	0	3	1	0	0	2	1	1	0	0	0
Seroreverted	12	14	9	11	9	9	12	16	9	16	6	7	8	5
Status Unknown	2	1	0	0	1	0	0	0	0	0	0	0	0	0

Figure 14.1 AIDS cases, deaths, and prevalence among transgender persons, 1998-2007, San Francisco 46

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cases	17	18	21	14	18	24	15	13	12	10
Deaths	7	6	12	15	9	9	12	11	9	7
Persons Living with AIDS	139	151	160	159	168	183	186	188	191	194



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Acknowledgments

This report was prepared by the HIV Epidemiology Section staff. We wish to thank the San Francisco Sexually Transmitted Disease Prevention and Control Services, the San Francisco Stop AIDS Project, and the Pediatric Spectrum of Disease Project for providing data in this report.

In addition, we wish to acknowledge the contribution of persons with HIV/AIDS, HIV/AIDS health care providers, community groups, researchers, and members of the community. Publication of this report would not have been possible without their cooperation, dedication, and hard work.

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Executive Summary

Identifying populations at risk for new HIV infections is a priority for HIV surveillance and prevention programs. Traditional surveillance activities capture the number of new HIV diagnoses – which includes both newly acquired infections (also called incident infections) as well as longstanding infections (also called prevalent infections). While HIV prevalence rates include both new and longstanding HIV cases, determining HIV incidence, that is, the occurrence of new HIV infections, is challenging using traditional surveillance techniques.

The Centers for Disease Control and Prevention (CDC) recently released a national HIV incidence estimate using data collected from 22 states in 2006. In this system, blood remaining from standard HIV tests from persons newly diagnosed with HIV is retested using a laboratory assay (called BED) that classifies individuals as either having a recently acquired HIV infection (within the past six months, on average) or having a longer-standing infection. Results from this test are used with a statistical adjustment for frequency of HIV testing to calculate HIV incidence. It was estimated that 56,300 (95% confidence interval [CI] 48,200 – 64,500) persons were newly infected in the U.S. in 2006. Applying this methodology in San Francisco, we estimated that there were 935 new HIV infections (95% CI 658 – 1,212) in 2006. Among men who have sex with men (MSM), including MSM who inject drugs (MSM IDU), the estimate was 716 (95% CI 489 – 944).

Although estimating HIV incidence is new at the national level, San Francisco has estimated incidence among high risk populations since 1990 by reviewing surveillance, research, and community program data. Using this ‘consensus’ method, we estimated that the number of new HIV infections among adults in San Francisco in 2006 was 975 (lower and upper plausible bounds, 801 and 1,082, respectively) and among MSM (including MSM IDU), was 851 (732 – 1,023) (see HIV/AIDS Epidemiology Annual Report 2005).

Using the CDC method, we recently calculated incidence for 2007 and estimated that there were 792 (95% CI 552 – 1,033) new infections in San Francisco in 2007. Among MSM and MSM IDU, the estimate was 626 (95% CI 444 – 814).

Both methods of estimating HIV incidence have limitations. The CDC method extrapolates from a relatively small number of new HIV diagnoses and BED tests to the entire population of San Francisco and the consensus estimate relies on a synthesis of data that cannot be directly combined. It is worth noting that the 2006 CDC and the consensus estimates are very close, providing support that these estimates are likely to be similar to the ‘true incidence.’ Although the point estimates from the CDC method for 2006 and 2007 show a decrease, the confidence intervals overlap, suggesting that incidence has been stable.

Technologies to identify HIV infections at earlier stages are under development and should provide us with the ability to determine recent infections on the individual level. In the meantime, we will use the HIV incidence surveillance system to produce a population-based HIV incidence estimate each year and adding this estimate to the other available sources of data to gauge the HIV epidemic in San Francisco.

1

Overview of HIV/AIDS in San Francisco

HIV/AIDS surveillance in San Francisco is conducted through various methods and evaluated on a regular basis (see Technical Notes, HIV/AIDS Surveillance Methods). Since the beginning of the epidemic to December 31, 2008, a cumulative total of 28,114 San Francisco residents were diagnosed with AIDS (Table 1.1). This comprises 18% of California AIDS cases and three percent of cases reported nationally. Compared to cases reported in California and the United States as a whole, AIDS cases in San Francisco are more likely to be male, white, and men who have sex with men (MSM), including MSM who also inject drugs intravenously (MSM IDU).

Table 1.1 Characteristics of cumulative AIDS cases in San Francisco, California, and the United States[#]

	San Francisco (N = 28,114)		California (N = 152,318)	United States (N = 1,030,832)
	Number	%	%	%
Gender				
Male	26,563	94%	91%	80%
Female	1,160	4%	9%	20%
Transgender*	391	1%	<1%	--
Race/Ethnicity				
White	20,090	71%	55%	39%
African American	3,610	13%	18%	40%
Latino	3,305	12%	23%	19%
Asian/Pacific Islander	918	3%	2%	<1%
Native American	149	1%	<1%	<1%
Other/Unknown	42	<1%	<1%	<1%
Exposure Category				
MSM	20,901	74%	67%	44%
IDU	2,150	8%	10%	23%
MSM IDU	4,195	15%	9%	7%
Heterosexual	432	2%	6%	14%
Transfusion/Hemophilia	166	<1%	2%	2%
Other/Unidentified	270	1%	6%	11%

San Francisco data are reported through March 9, 2009 for cases diagnosed through December 2008; California data are reported through December 2008. U.S. data are reported through December 2007 and may be found in the CDC HIV/AIDS Surveillance Report, 2007. Vol. 19. Percentage may not add to 100% due to rounding.

* Transgender data are not reported by the United States. See Technical Notes "Transgender Status."

Overview of HIV/AIDS in San Francisco

For San Francisco AIDS cases, the distribution of HIV exposure categories differs by race/ethnicity and gender. Among men, MSM account for the majority of male AIDS cases within all racial/ethnic groups (Table 1.2). In African American men, heterosexual injection drug use is the second leading exposure category, but for men of all other racial/ethnic groups, MSM IDU represents the second most frequent exposure category. Cumulatively, less than 2 percent of men with AIDS acquired HIV infection through heterosexual contact, transfusion of blood or blood products, or other exposure categories.

Among women with AIDS, the most frequent exposure category for whites, African Americans, Latinas, and Native Americans is injection drug use (IDU) followed by heterosexual contact. For Asian/Pacific Islander women, 45% acquired their infection through heterosexual contact, 30% through injection drug use, and 16% through transfusion of blood or blood products.

Compared to men and women with AIDS, male to female transgender AIDS cases were more likely to be in a transmission category involving injection drug use. Among transgender AIDS cases, 56% of whites, 69% of African Americans, 44% of Latinos and 39% Asian/Pacific Islander were IDU.

Table 1.2 Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2008, San Francisco

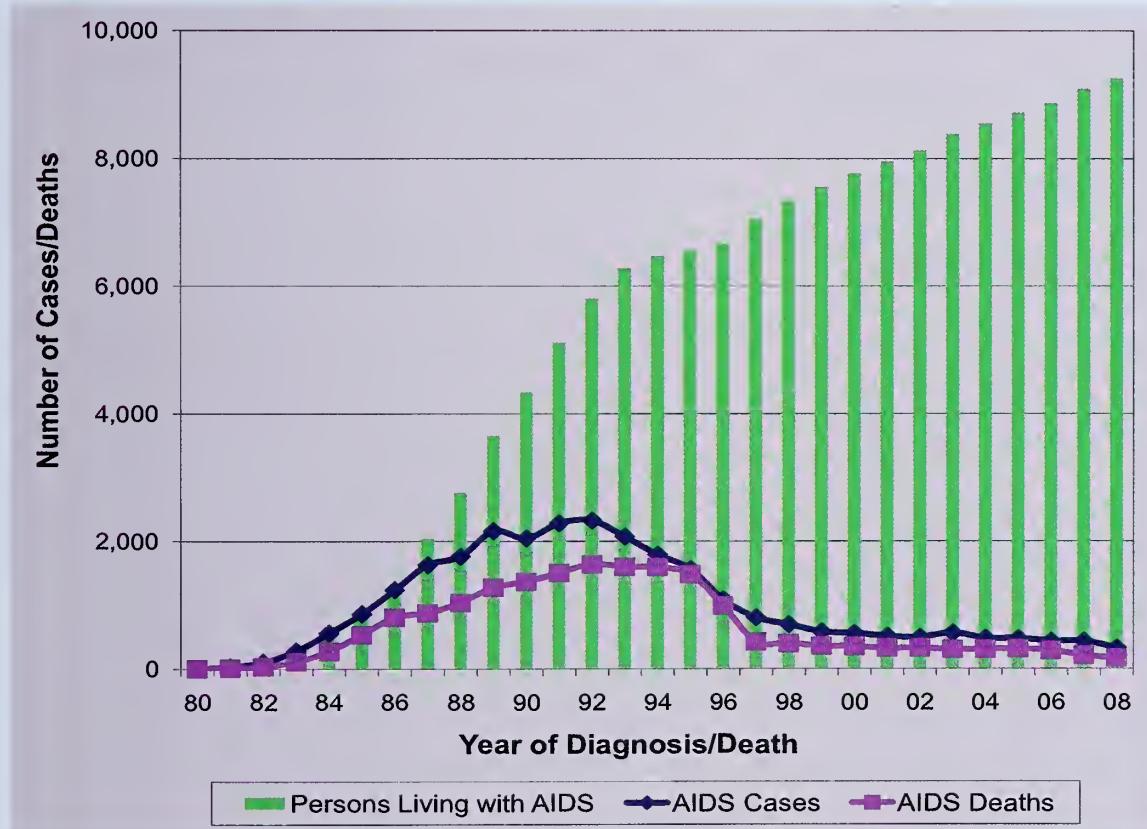
	White Number (%)	African American Number (%)	Latino Number (%)	Asian/Pacific Islander Number (%)	Native American Number (%)
Male					
MSM	16,039 (82)	1,538 (52)	2,375 (78)	680 (84)	69 (52)
IDU	515 (3)	687 (23)	167 (6)	25 (3)	10 (8)
MSM IDU	2,893 (15)	594 (20)	382 (13)	61 (7)	49 (37)
Heterosexual	32 (<1)	54 (2)	31 (1)	11 (1)	2 (2)
Transfusion/					
Hemophilia	50 (<1)	17 (1)	22 (1)	14 (2)	0 (0)
Other/Unidentified	67 (<1)	57 (2)	58 (2)	23 (3)	2 (2)
Male Subtotal	19,596	2,947	3,035	814	132
Female					
IDU	252 (66)	379 (71)	72 (46)	21 (30)	11 (85)
Heterosexual	84 (22)	120 (22)	61 (39)	31 (45)	2 (15)
Transfusion/					
Hemophilia	29 (8)	13 (2)	10 (6)	11 (16)	0 (0)
Other/Unidentified	18 (5)	25 (5)	12 (8)	6 (9)	0 (0)
Female Subtotal	383	537	155	69	13
Transgender (Male to Female Only*)					
IDU	62 (56)	87 (69)	50 (44)	11 (39)	#
Non IDU	48 (44)	39 (31)	64 (56)	24 (61)	#
Transgender Subtotal	110	126	114	35	#

* See Technical Notes "Transgender Status."

Data are not released due to potential small population size.

The number of new AIDS cases diagnosed each year among San Francisco residents reached a peak of 2,327 cases in 1992 and has declined since then (Figure 1.1). Deaths among persons with AIDS reached a plateau between 1992 and 1995 and declined thereafter. The sharpest decline in AIDS deaths occurred between 1995 and 1997, reflecting the impact of combination antiretroviral therapies. Since 1999, slight declines have continued in both cases and deaths. Delays in reporting affect the number of cases and deaths for recent years. Therefore, the numbers of cases and deaths for 2007 and 2008 may be revised upward in future reports. By the end of 2008, there were 9,248 San Francisco residents living with AIDS.

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2008, San Francisco

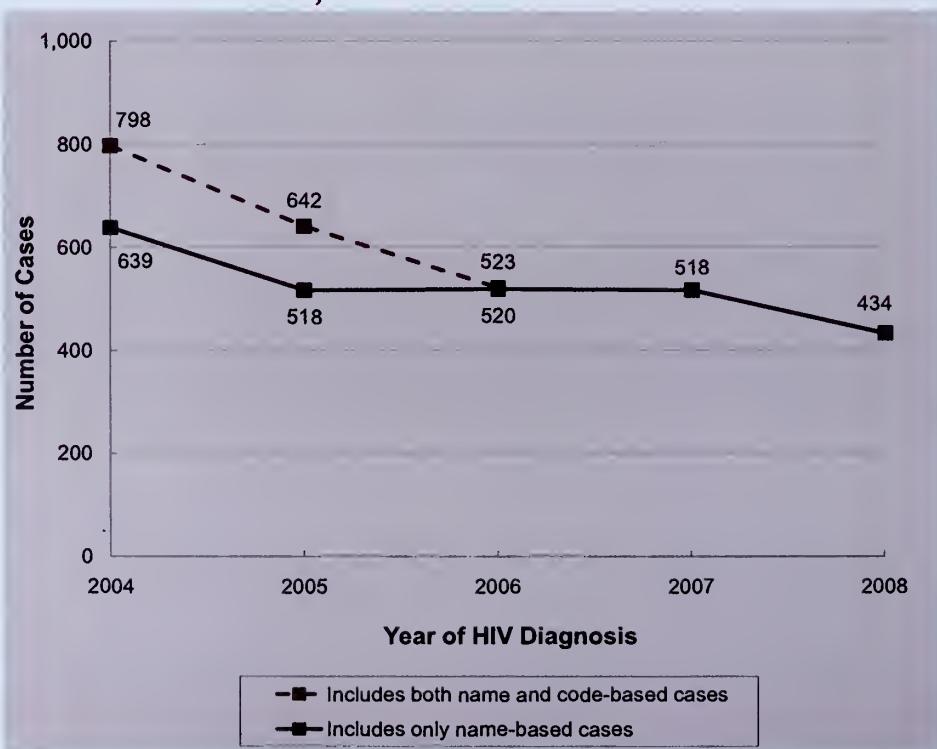


Overview of HIV/AIDS in San Francisco

Figure 1.2 illustrates the number of persons newly diagnosed with HIV disease (including HIV and AIDS) between 2004 and 2008. The date of HIV diagnosis was determined based on the earliest date of HIV antibody test, viral load or CD4 test, initiation of antiretroviral therapy, or patient self-report of a positive HIV test. Persons with HIV non-AIDS were reported by a non-name code prior to April 2006. The dashed line demonstrates the number of cases reported by name as well as by code, while the solid line includes cases reported only by name. The majority of code-based HIV cases reported prior to April 2006 have been re-reported to name-based HIV cases. However, for about 20% of code-based HIV cases names have not been ascertained. It is possible that for some code-based cases the date of HIV diagnosis is earlier than what was initially reported. For example, a person may have been tested or diagnosed at another facility at an earlier time but the information cannot be obtained due to the limitation of using the non-name code. Therefore some of the code-based HIV cases may have been diagnosed before 2004 and this would result in the numbers for 2004 and 2005 falling in between the dashed and solid lines shown in the figure.

The number of HIV/AIDS cases diagnosed was relatively stable between 2006 and 2007 and declined in 2008 (Figure 1.2). In general, there is a delay between the time a person is diagnosed with HIV disease and the time that person is reported to the health department. For this reason, numbers of cases diagnosed in recent years were often lower because of persons diagnosed in these years who have not yet been reported. There is a statistical method developed by the Centers for Disease Control and Prevention to take reporting delay into account when examining the trends in HIV disease diagnosis. If we apply this statistical method to our data to adjust for reporting delay, the number of persons diagnosed with HIV between 2006 and 2008 would be steadily increasing. Therefore, careful attention should be paid to the actual numbers of new diagnoses over time.

Figure 1.2 Number of cases newly diagnosed with HIV disease, 2004-2008, San Francisco



In addition, trends in HIV diagnosis using case reporting data should be interpreted with caution. These data include HIV infected persons who have been tested or who are in care and do not include persons who are not aware of their infection. These data also do not necessarily reflect trends in new HIV infections. Our estimate of HIV incidence in San Francisco (see Executive Summary) indicates that the number of new HIV infections remain relatively stable between 2006 and 2007. Therefore, if the upward trends in HIV diagnosis between 2006 and 2008 estimated after accounting for reporting delay is true (which can only be validated in a few years by examining the data retrospectively), it may reflect increases in HIV testing and diagnosis among those who were previously unaware of their infection.

Table 1.3 shows the characteristics of persons diagnosed with HIV between 2004 and 2008. The majority were male, white, aged 25-49 years, and MSM. There was a slight increase in the proportion of persons of color.

Table 1.3 Characteristics of persons newly diagnosed with HIV between 2004 and 2008, San Francisco

	Year of HIV Initial Diagnosis*				
	2004	2005	2006	2007	2008
Total Number	798	642	523	518	434
Gender					
Male	91%	89%	91%	88%	90%
Female	7%	9%	7%	8%	8%
Transgender	2%	2%	2%	4%	2%
Race/Ethnicity					
White	55%	53%	57%	54%	50%
African American	14%	17%	14%	15%	16%
Latino	19%	19%	20%	19%	22%
Asian/Pacific Islander	8%	6%	6%	8%	9%
Native American	1%	1%	1%	0%	1%
Other/unknown	4%	4%	2%	4%	4%
Age at HIV Diagnosis (years)					
0 – 12	<1%	<1%	0%	0%	0%
13 – 24	9%	9%	10%	11%	10%
25 – 49	80%	80%	75%	78%	80%
50+	12%	11%	15%	11%	9%
Exposure Category					
MSM	70%	66%	71%	67%	70%
IDU	9%	8%	8%	8%	7%
MSM IDU	12%	12%	12%	11%	10%
Heterosexual	4%	6%	4%	8%	6%
Other/Unidentified	6%	8%	6%	6%	7%

* Data include persons with a diagnosis of HIV (not AIDS), an initial diagnosis of HIV (not AIDS) and later diagnosed with AIDS, and concurrent diagnosis of HIV and AIDS, reported to the SFPDPH as of March 9, 2009.

Overview of HIV/AIDS in San Francisco

Characteristics of living HIV/AIDS cases in San Francisco are different compared to statewide and nationwide cases (Table 1.4). Compared to California and U.S. living HIV/AIDS cases, San Francisco living HIV/AIDS cases are more likely to be male, white, and MSM. There is a larger proportion of persons living with HIV/AIDS in California and the U.S. that are female, African Americans and Latinos. Heterosexual contact and IDU (non-MSM) are also more common among California and U.S. cases than San Francisco cases.

Table 1.4 Characteristics of persons living with HIV/AIDS in San Francisco, California, and the United States, December 2008

	San Francisco		California		United States ³
	Living HIV Non-AIDS Case ¹	Living HIV/AIDS Cases	Living HIV Non-AIDS Cases ²	Living HIV/AIDS Cases	Living HIV/AIDS Cases
Total Number	6,509	15,757	34,006	100,366	551,932
Gender					
Male	92%	92%	86%	87%	72%
Female	6%	6%	13%	12%	27%
Transgender	2%	2%	1%	1%	--
Race/Ethnicity					
White	63%	64%	48%	47%	33%
African American	14%	14%	19%	19%	48%
Latino	14%	15%	28%	30%	17%
Asian/Pacific Islander	5%	5%	3%	3%	<1%
Native American	1%	1%	<1%	<1%	<1%
Other/Unknown	3%	1%	1%	1%	<1%
Exposure Category					
MSM	73%	73%	67%	65%	46%
IDU	7%	8%	7%	9%	19%
MSM IDU	11%	13%	7%	8%	5%
Heterosexual	3%	3%	9%	10%	28%
Other/Unidentified	6%	3%	10%	8%	2%

1. San Francisco HIV non-AIDS cases include both the name-based and code-based HIV cases.

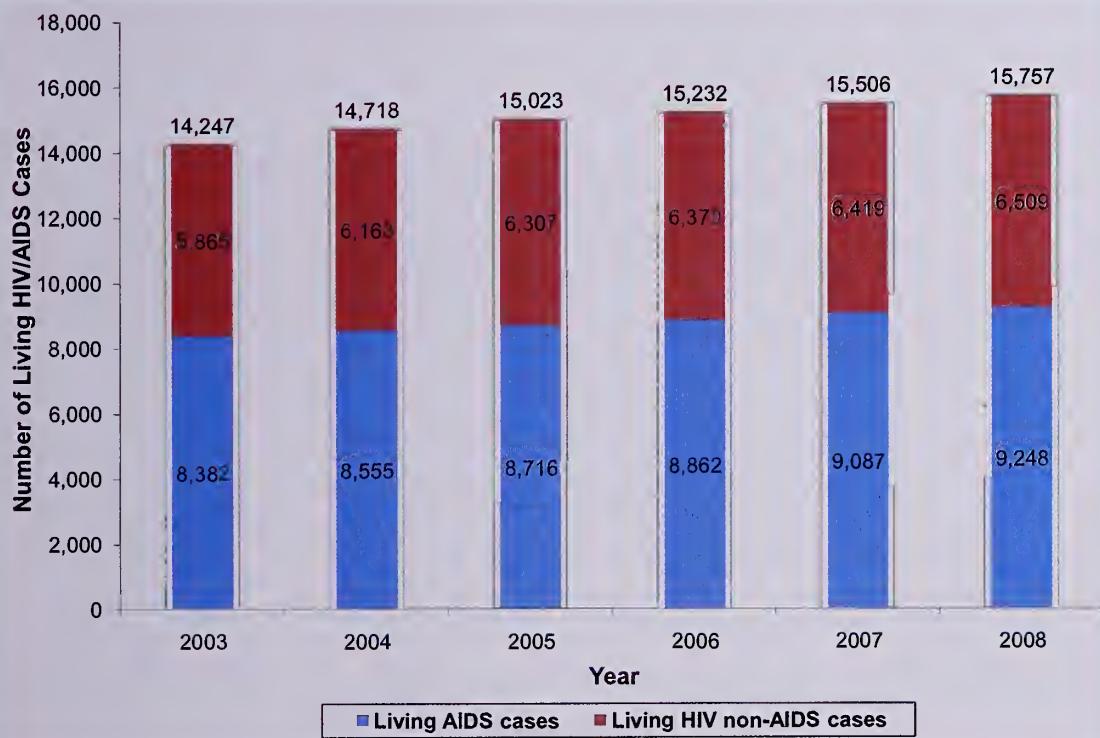
2. California HIV non-AIDS cases include only the name-based HIV cases.

3. U.S. data are through December 2007 and include 34 states with confidential name-based HIV reporting. These are estimates by the CDC that reflect adjustments in reported case counts.

The number of persons living with HIV/AIDS reported to the San Francisco Department of Public Health increased from 14,247 in 2003 to 15,757 in 2008 (Figure 1.3). The number includes AIDS cases and both code-based and name-based HIV cases. The “2006 HIV Consensus Estimates” estimated 18,735 persons living with HIV/AIDS in San Francisco on January 1, 2006 (see HIV/AIDS Epidemiology Annual Report 2005).

The gap between the consensus estimate and the case reporting data indicates that a proportion of persons with HIV are not aware of their infection. In addition, reporting of HIV cases is incomplete, especially for those diagnosed in earlier years. Also, case report data only includes persons diagnosed with HIV/AIDS who are residents of San Francisco at the time of their diagnosis. Persons who are residents of other counties and receive medical care in San Francisco are not included in the case counts. Persons who were residents of San Francisco at the time of their diagnosis but now reside elsewhere continue to be counted in these data.

Figure 1.3 HIV/AIDS prevalence, 2003-2008, San Francisco



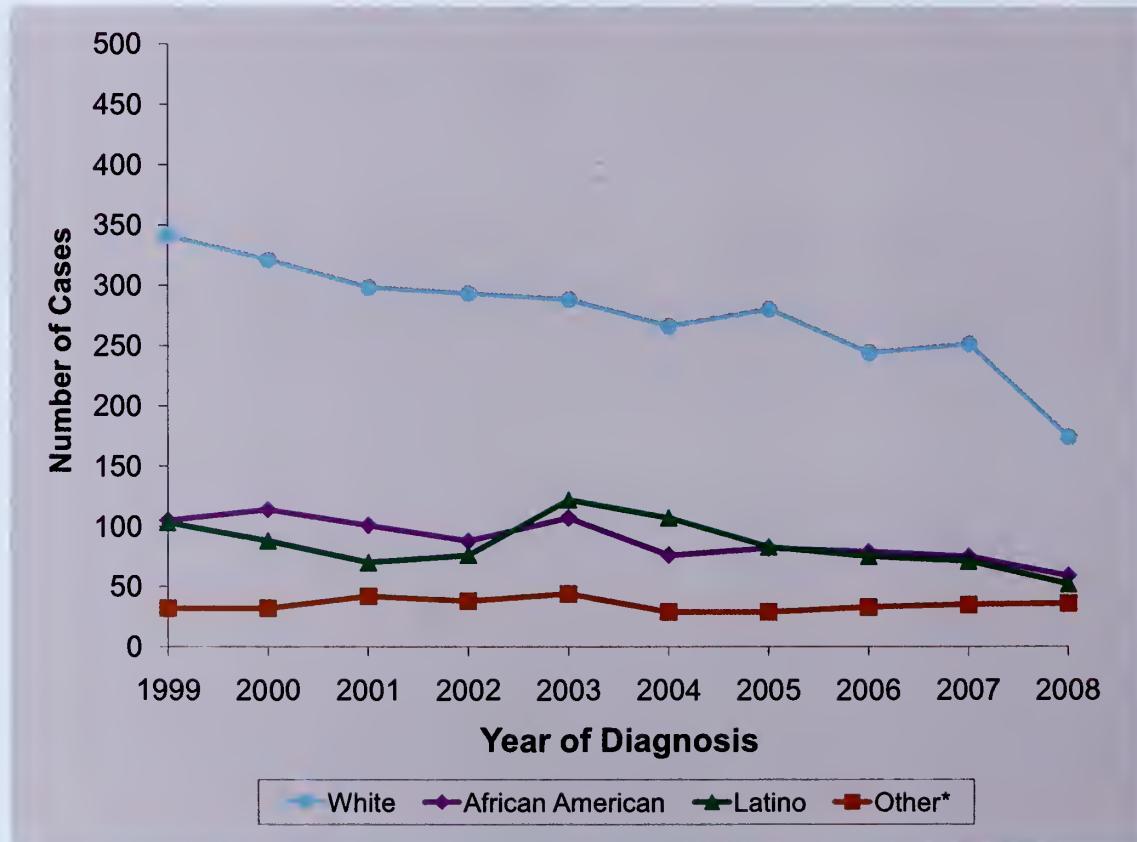
2

Trends in AIDS Diagnosis

Race/ethnicity

In absolute numbers, AIDS cases in San Francisco have occurred predominantly among whites (Figure 2.1). The number of white AIDS cases has declined over the last 10 years. The number of African American AIDS cases also declined from 1998, but has been level between 2004 and 2007. The trend for Latino AIDS cases shows a period of slight increase until 2003 and a decline thereafter. AIDS case counts for recent years are subject to delays in reporting, particularly for 2008.

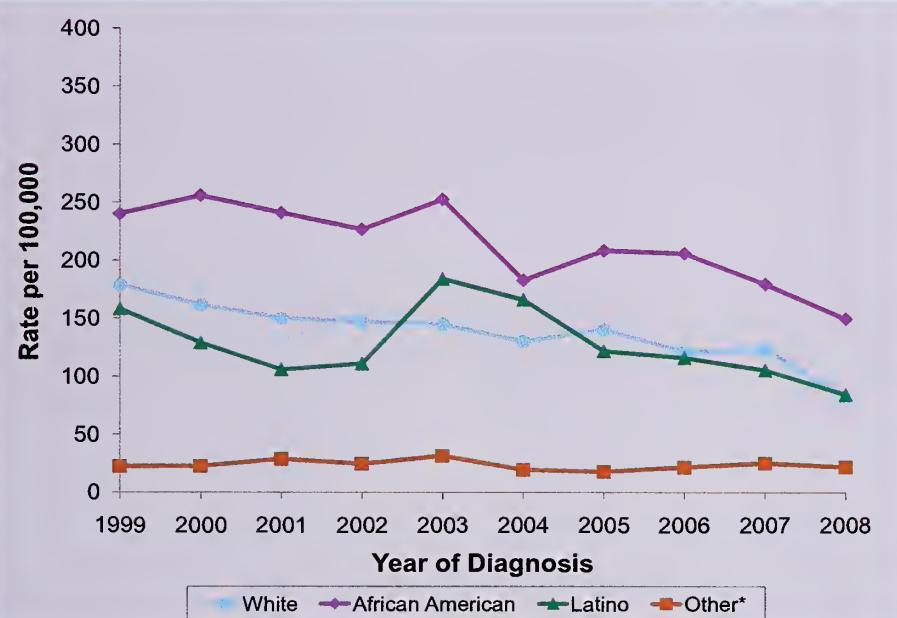
Figure 2.1 Number of AIDS cases by race/ethnicity, 1999-2008, San Francisco



* Cases in the “Other” race/ethnicity category include 82% Asian/Pacific Islanders and 12% Native Americans.

Since 1999, the AIDS incidence rates among African American men have been higher than for men of all other racial/ethnic groups (Figure 2.2). The AIDS incidence rates for white men and Latino men have been similar since 2005. In 2008, the incidence rate of AIDS per 100,000 population was 150 among African American men, 82 for white men, and 84 for Latino men. Delays in reporting result in under-estimation of rates for recent years, particularly for 2008.

Figure 2.2 Male annual AIDS incidence rates[#] per 100,000 population by race/ethnicity, 1999-2008, San Francisco

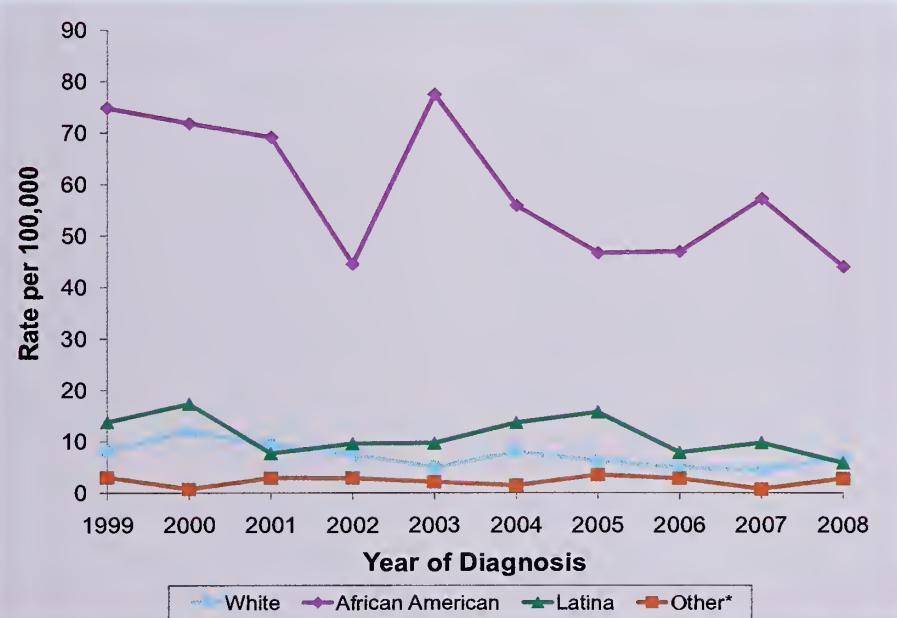


See Technical Notes "AIDS Incidence Rates."

* Cases in the "Other" race/ethnicity category include 81% Asian/Pacific Islanders and 11% Native Americans.

AIDS incidence rates among women are much lower than among men. Throughout the epidemic, African American women have been more affected by AIDS than women of other racial/ethnic groups. Although the AIDS incidence rate for African American women has declined since 1999, in recent years (2004 to 2008) they have been relatively stable (Figure 2.3). In 2008, the incidence rate of AIDS per 100,000 population was 44 for African American women, 6 for Latina women, 7 for white women, and 3 for women of other racial/ethnic groups.

Figure 2.3 Female annual AIDS incidence rates[#] per 100,000 population by race/ethnicity, 1999-2008, San Francisco



See Technical Notes "AIDS Incidence Rates."

* Cases in the "Other" race/ethnicity category include 83% Asian/Pacific Islanders and 10% Native Americans.

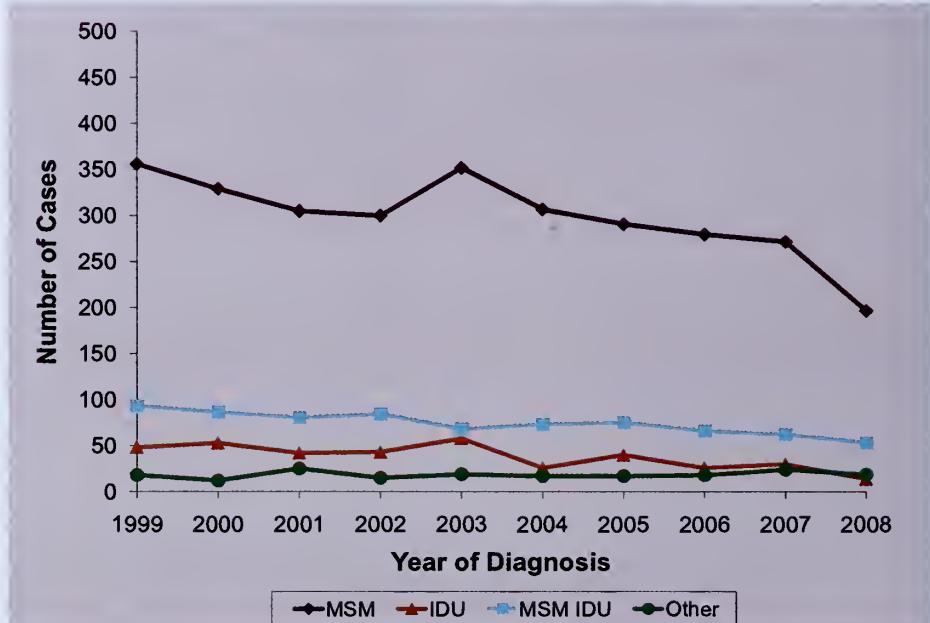
Trends in AIDS Diagnosis

Exposure category

Most of the male AIDS cases in San Francisco have occurred among MSM. The number of cases among MSM has decreased between 1999 and 2008 (Figure 2.4). For MSM IDU the number of AIDS cases was fairly stable between 2003 and 2007. In 2008, 70% of male AIDS cases were MSM, 19% were MSM IDU, and 5% were heterosexual IDU.

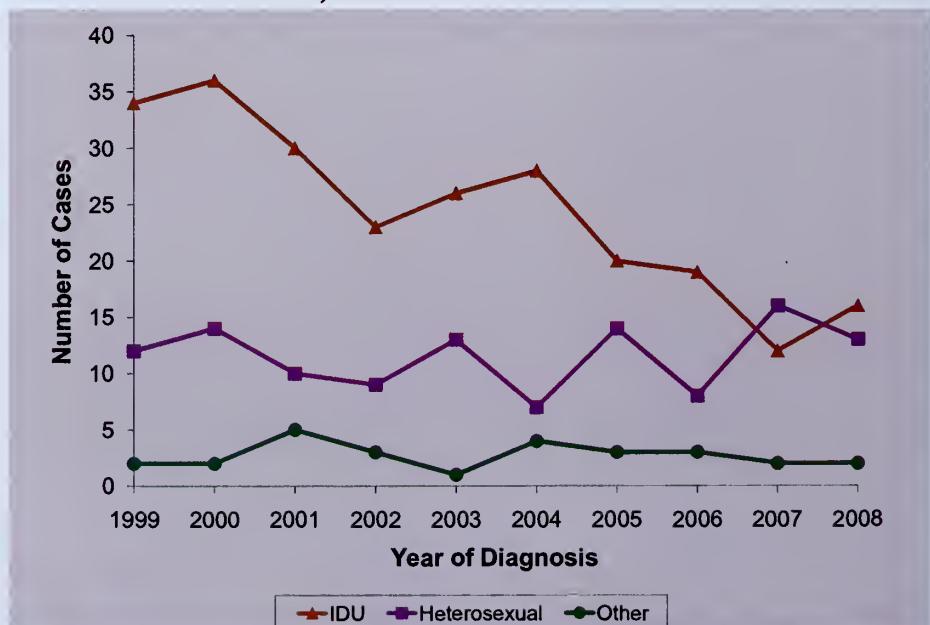
Injection drug use is the predominant exposure category for female AIDS cases, followed by heterosexual contact. The number of female IDU cases has declined since 1999, while female AIDS cases due to heterosexual contact and other exposure categories have remained stable. In 2008, 52% of female cases were due to injection drug use and 42% were attributed to heterosexual contact. Nationwide, heterosexual contact continued to be the predominant exposure category for female AIDS cases reported in 2007.

Figure 2.4 Number of male AIDS cases* by exposure category, 1999-2008, San Francisco



* Excludes male-to-female transgender AIDS cases.

Figure 2.5 Number of female AIDS cases* by exposure category, 1999-2008, San Francisco



* Excludes female-to-male transgender AIDS cases.

Age

Cumulatively, the largest number of men, women, and transgender persons with AIDS were diagnosed between ages 30 and 39 years (Table 2.1). Younger persons (under the age of 30) made up a larger proportion of female and transgender AIDS cases than male AIDS cases. For cases diagnosed in 2005-2008, there was an increase in the proportion of women diagnosed with AIDS in the 50+ year age group, as well as the proportion of men in the over 40 year age groups.

The trend is different among transgender AIDS cases. In 2005-2008, the proportion of transgender persons diagnosed in the 40+ year age group was level and the proportion diagnosed in the 13-29 year age group increased compared to the previous time period.

Table 2.1 AIDS cases by gender and age at diagnosis, diagnosed 1997-2008, San Francisco

	1997-2000		2001-2004		2005-2008		Cumulative Totals	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in Years)								
0 - 19	3	(<1)	5	(<1)	4	(<1)	49	(<1)
20 - 29	226	(10)	139	(8)	143	(10)	2,967	(11)
30 - 39	1,012	(43)	686	(38)	447	(30)	11,892	(45)
40 - 49	778	(33)	634	(35)	587	(40)	8,428	(32)
50+	339	(14)	350	(19)	303	(20)	3,227	(12)
Male Subtotal	2,358	(100)	1,814	(100)	1,484	(100)	26,563	(100)
Female (Age in Years)								
0 - 19	3	(2)	2	(1)	0	(0)	23	(2)
20 - 29	23	(12)	21	(13)	18	(14)	164	(14)
30 - 39	71	(36)	51	(32)	40	(31)	447	(39)
40 - 49	75	(38)	57	(36)	39	(30)	350	(30)
50+	26	(13)	28	(18)	31	(24)	176	(15)
Female Subtotal	198	(100)	159	(100)	128	(100)	1,160	(100)
Transgender (Age in Years)								
13 - 29	19	(24)	7	(10)	12	(26)	95	(24)
30 - 39	32	(41)	34	(47)	14	(30)	172	(44)
40+	28	(35)	31	(43)	20	(43)	124	(32)
Transgender Subtotal	79	(100)	72	(100)	46	(100)	391	(100)

3

Persons Living with HIV/AIDS

The number of persons living with HIV/AIDS continues to increase due to ongoing incidence of HIV combined with an increase in survival after AIDS. Persons were counted as living in a year if their HIV diagnosis date was in or before that year and they were known to be alive at the end of the year. As of December 31, 2008, 15,757 San Francisco residents were living with HIV/AIDS (Table 3.1). Demographic and risk characteristics of persons living with HIV/AIDS remained mostly stable between 2004 and 2008; the largest numbers are white, age 40-49 years, and MSM (including MSM IDU). Age 50+ was the fastest growing age category of persons living with HIV/AIDS, rising from 30% to 40% between 2004 and 2008. This increase most likely reflects improved survival from use of antiretroviral therapy.

Table 3.1 Trends in persons living with HIV/AIDS by demographic and risk characteristics, 2004-2008[#], San Francisco

	2004		2005		2006		2007		2008	
	Number	(%)								
Gender										
Male	13,522	(92)	13,799	(92)	14,013	(92)	14,259	(92)	14,501	(92)
Female	864	(6)	890	(6)	886	(6)	906	(6)	916	(6)
Transgender	332	(2)	334	(2)	333	(2)	341	(2)	340	(2)
Race/Ethnicity										
White	9,573	(65)	9,712	(65)	9,814	(64)	9,944	(64)	10,043	(64)
African American	2,131	(14)	2,152	(14)	2,161	(14)	2,186	(14)	2,212	(14)
Latino	2,086	(14)	2,175	(14)	2,250	(15)	2,321	(15)	2,397	(15)
Asian/Pacific Islander	657	(4)	682	(5)	696	(5)	733	(5)	766	(5)
Native American	97	(1)	102	(1)	104	(1)	102	(1)	104	(1)
Other/Unknown	174	(1)	200	(1)	207	(1)	220	(1)	235	(1)
Age in Years (at end of each year)										
0 - 19	42	(<1)	38	(<1)	35	(<1)	34	(<1)	31	(<1)
20 - 29	648	(4)	656	(4)	635	(4)	642	(4)	622	(4)
30 - 39	3,552	(24)	3,245	(22)	2,993	(20)	2,804	(18)	2,624	(17)
40 - 49	6,127	(42)	6,293	(42)	6,296	(41)	6,290	(41)	6,234	(40)
50+	4,349	(30)	4,791	(32)	5,273	(35)	5,736	(37)	6,246	(40)
Exposure Category										
MSM	10,590	(72)	10,837	(72)	11,031	(72)	11,252	(73)	11,462	(73)
IDU	1,269	(9)	1,251	(8)	1,233	(8)	1,225	(8)	1,223	(8)
MSM IDU	2,066	(14)	2,067	(14)	2,064	(14)	2,065	(13)	2,061	(13)
Heterosexual	340	(2)	373	(2)	388	(3)	421	(3)	442	(3)
Transfusion/Hemophilia	36	(<1)	36	(<1)	35	(<1)	35	(<1)	35	(<1)
Other/Unknown	417	(3)	459	(3)	481	(3)	508	(3)	534	(3)
Total	14,718		15,023		15,232		15,506		15,757	

Persons living with HIV/AIDS at the end of each year.

As of December 31, 2008, a total of 9,248 persons were living with AIDS in San Francisco (Table 3.2). Ninety-two percent were male, 6% were female, and 2% were transgender. Among men, the majority of cases were white. MSM accounted for the largest proportion of living male AIDS cases within all racial/ethnic groups. For white and African American men, half or more of living AIDS cases were 50 years of age or older. For Latino, Asian Pacific Islander, and Native American men the majority of living AIDS cases were less than 50 years of age.

Among women living with AIDS, African American was the largest racial/ethnic group (45%) followed by white (29%). The most frequent exposure categories for living female AIDS cases were injection drug use and heterosexual contact. Similar to living male AIDS cases, the majority of living female AIDS cases were 25-49 years of age.

Table 3.2 Persons living with AIDS by gender, exposure category, age and race/ethnicity, December 2008, San Francisco

	African		Asian/Pacific Islander		Total Number*	
	White Number	American Number	Latino Number	& Native American Number		
Male						
<i>Exposure category</i>						
MSM	4,686 (81)	520 (52)	1,059 (81)	349 (80)	6,632	
IDU	190 (3)	221 (22)	50 (4)	18 (4)	482	
MSM IDU	841 (15)	194 (19)	145 (11)	46 (11)	1,231	
Heterosexual	15 (<1)	33 (3)	23 (2)	7 (2)	79	
Other	4 (<1)	4 (<1)	4 (<1)	6 (1)	19	
No reported risk	33 (1)	28 (3)	26 (2)	12 (3)	99	
<i>Age in Years (at end of 2008)</i>						
<13	0 (0)	0 (0)	1 (<1)	0 (0)	2	
13 - 24	8 (<1)	6 (<1)	9 (<1)	6 (1)	30	
25 - 49	2,766 (48)	496 (50)	874 (67)	277 (63)	4,434	
50+	2,995 (52)	498 (50)	423 (32)	155 (35)	4,076	
Male Subtotal	5,769	1,000	1,307	438	8,542	
Female						
<i>Exposure category</i>						
IDU	97 (64)	153 (66)	35 (41)	10 (23)	296	
Heterosexual	42 (28)	65 (28)	39 (46)	26 (59)	172	
Other	5 (3)	4 (2)	6 (7)	4 (9)	19	
No reported risk	7 (5)	9 (4)	5 (6)	4 (9)	26	
<i>Age in Years (at end of 2008)</i>						
13 - 24	0 (0)	3 (1)	5 (6)	1 (2)	9	
25 - 49	95 (63)	117 (51)	48 (56)	32 (73)	294	
50+	56 (37)	111 (48)	32 (38)	11 (25)	210	
Female Subtotal	151	231	85	44	513	
Transgender	45	60	62	26	193	
Total	5,965	1,291	1,454	508	9,248	

* Includes persons with multiple race or whose race/ethnicity information is not available.

Person Living with HIV/AIDS

As of December 31, 2008, 6,509 living HIV non-AIDS cases (persons living with HIV who had not developed AIDS) had been reported in San Francisco (Table 3.3). Demographic and risk characteristics for living HIV non-AIDS cases were similar to living AIDS cases. Ninety-two percent were male, 6% were female, and 2% were transgender. The majority of living male HIV non-AIDS cases were white and MSM. The majority of living female HIV non-AIDS cases were African American and IDU. Among both men and women, 25-49 year olds accounted for the largest number of living HIV cases.

There were larger proportions of living HIV non-AIDS cases reported without risk information compared to living AIDS cases. This was partly due to the non-name code-based HIV reporting system used to report HIV non-AIDS cases until April 17, 2006. This former reporting system resulted in the inability to follow up and obtain complete case information. Risk information is expected to be more complete as the name-based HIV reporting system becomes more mature.

Table 3.3 Persons living with HIV non-AIDS by gender, exposure category, age and race/ethnicity, December 2008, San Francisco

	White Number (%)	African American Number (%)	Latino Number (%)	Asian/Pacific Islander & Native American Number (%)	Total Number*
Male					
<i>Exposure Category</i>					
MSM	3,209 (82)	380 (55)	712 (84)	263 (85)	4,653
IDU	114 (3)	111 (16)	21 (2)	8 (3)	257
MSM IDU	477 (12)	97 (14)	66 (8)	24 (8)	675
Heterosexual	11 (<1)	27 (4)	14 (2)	4 (1)	60
Other	5 (<1)	2 (<1)	4 (<1)	1 (0)	12
No reported risk	112 (3)	69 (10)	35 (4)	9 (3)	302
<i>Age in Years (at end of 2008)</i>					
13 - 24	29 (1)	26 (4)	31 (4)	6 (2)	96
25 - 49	2,630 (67)	386 (56)	693 (81)	269 (87)	4,112
50+	1,269 (32)	274 (40)	128 (15)	34 (11)	1,751
Male Subtotal	3,928	686	852	309	5,959
Female					
<i>Exposure Category</i>					
IDU	64 (56)	79 (45)	22 (37)	14 (40)	184
Heterosexual	24 (21)	59 (34)	22 (37)	18 (51)	128
Other	3 (3)	4 (2)	3 (5)	0 (0)	12
No reported risk	24 (21)	34 (19)	12 (20)	3 (9)	79
<i>Age in Years (at end of 2008)</i>					
<13	0 (0)	1 (1)	2 (3)	0 (0)	4
13 - 24	5 (4)	6 (3)	4 (7)	0 (0)	16
25 - 49	85 (74)	94 (53)	42 (71)	27 (77)	257
50+	25 (22)	75 (43)	11 (19)	8 (23)	126
Female Subtotal	115	176	59	35	403
Transgender	33	59	32	18	147
Total	4,076	921	943	362	6,509

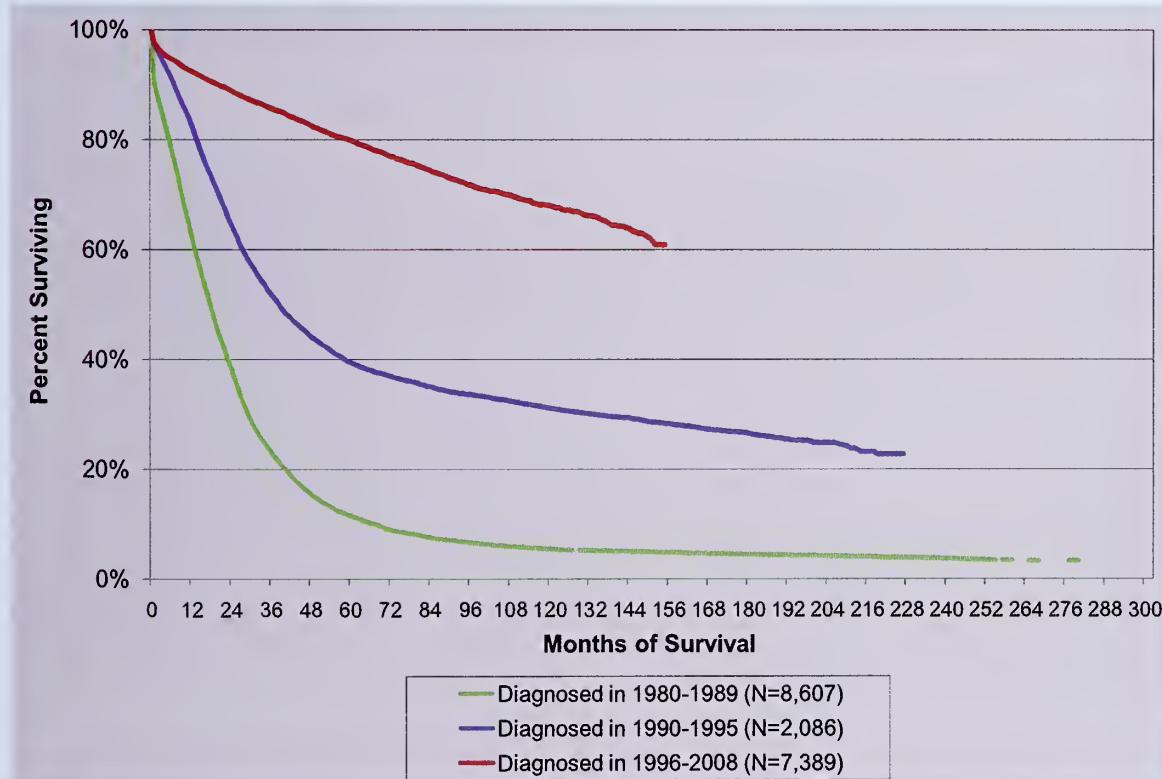
* Includes persons with multiple race or whose race/ethnicity information is not available.

4

Survival among Persons with AIDS

The Kaplan-Meier curve in Figure 4.1 demonstrates that survival improved for San Francisco AIDS cases between 1996 and 2008, compared to persons diagnosed in earlier time periods. Survival was poor for persons diagnosed in the first ten years of the AIDS epidemic (1980-1989) with 50% cases surviving 18 months (median survival time) after AIDS diagnosis. Between 1990 and 1995, survival improved; median survival time was 38 months. Approximately 61% of persons diagnosed with AIDS between 1996 and 2008 are still alive as of December 31, 2008. Improved survival among persons diagnosed with AIDS after 1995 is attributed to more effective antiretroviral therapies.

Figure 4.1 Kaplan-Meier survival* curves for persons diagnosed with AIDS in 1980-1989, 1990-1995, and 1996-2008, San Francisco

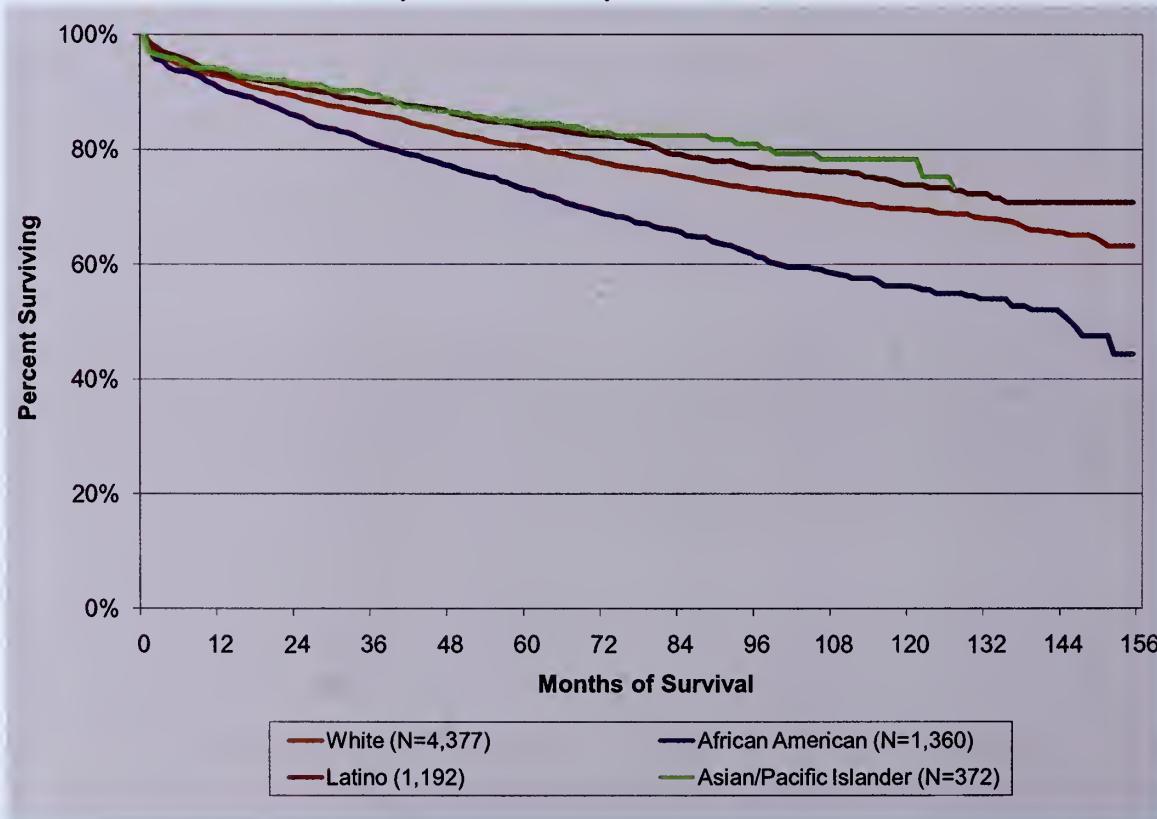


* See Technical Notes "AIDS Survival."

Survival among Persons with AIDS

Survival after AIDS diagnosis is worse for African Americans than other racial/ethnic groups (Figure 4.2). Among persons diagnosed between 1996 and 2008, the percent of African Americans surviving 60 months (five years) after AIDS was 73%, compared to 81% for whites, 84% for Latinos, and 84% for Asian/Pacific Islanders. The percent surviving 84 months (seven years) after AIDS diagnosis was 66% for African Americans, 75% for whites, 79% for Latinos, and 82% for Asian/Pacific Islanders.

Figure 4.2 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2008 by race/ethnicity, San Francisco

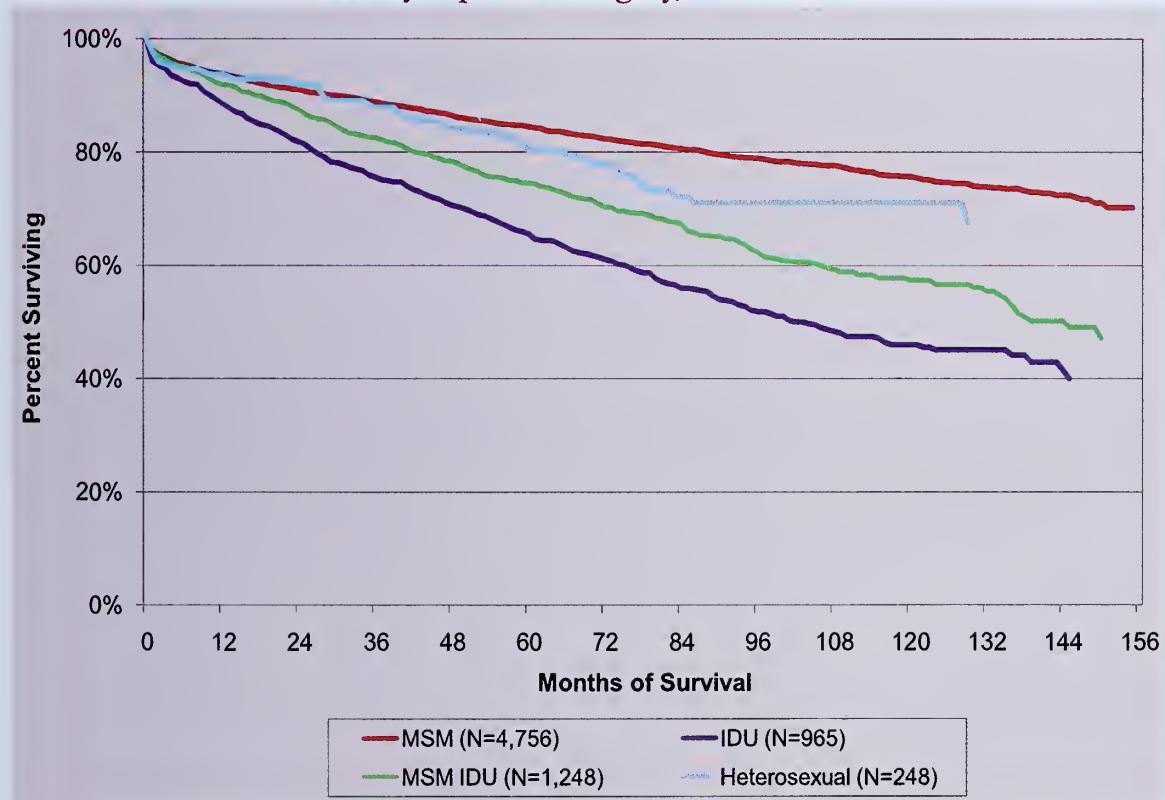


* See Technical Notes "AIDS Survival."

Survival after AIDS diagnosis has been better for MSM and heterosexuals compared to MSM IDU and heterosexual IDU. For AIDS cases diagnosed in 1996 to 2008, the five-year (60 months) survival was 85% for MSM, 81% for heterosexuals, 74% for MSM IDU, and 66% for heterosexual IDU (Figure 4.3).

Worse survival among IDU partly reflects higher death rates from causes associated with drug use such as overdose, liver disease, and other infections.

Figure 4.3 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2008 by exposure category, San Francisco

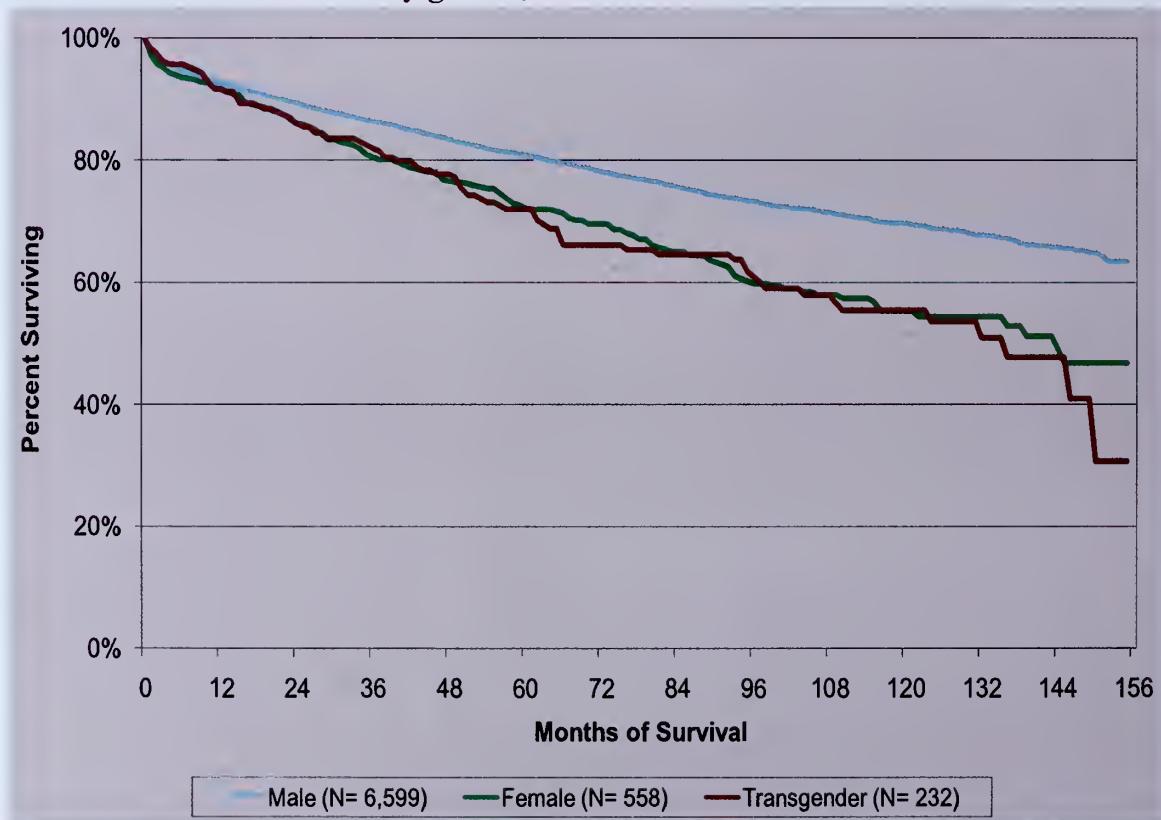


* See Technical Notes "AIDS Survival."

Survival among Persons with AIDS

By gender, male AIDS cases have better survival than female and transgender AIDS cases. The Kaplan-Meier curves show that female and transgender AIDS cases have similar survival experiences (Figure 4.4). The five-year (60 months) survival was 81% for men, 72% for women and 72% for transgender persons. The differences in survival by gender are consistent with lower use of highly active antiretroviral therapies and more IDU among women and transgender AIDS cases.

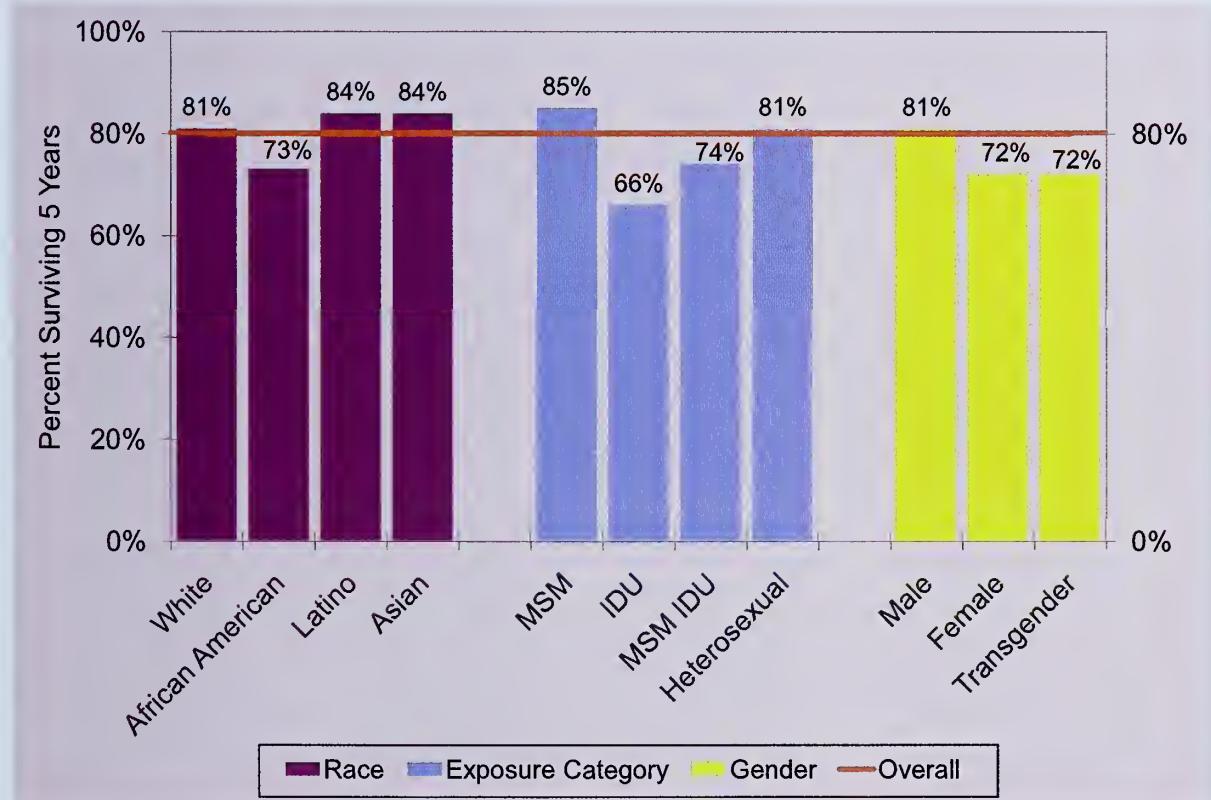
Figure 4.4 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2008 by gender, San Francisco



* See Technical Notes "AIDS Survival."

The overall five-year survival after AIDS for persons diagnosed with AIDS between 1996 and 2008 is 80% (Figure 4.5). Differences in survival occurred across race/ethnicity, exposure category, and gender groups. African Americans, IDU, MSM IDU, women, and transgender persons with AIDS have lower proportions surviving five years compared to other groups.

Figure 4.5 Proportion surviving five years after AIDS for persons diagnosed with AIDS between 1996 and 2008 by race/ethnicity, exposure category, and gender, San Francisco



5

Trends in HIV/AIDS Mortality

AIDS surveillance data

As of December 31, 2008, a total of 18,866 deaths have occurred among San Francisco AIDS cases since the beginning of the epidemic (Table 5.1). Reporting of deaths in recent years is not yet complete. The number of AIDS deaths was fairly stable across gender, race/ethnicity, and exposure categories between 2005 and 2006. Cumulatively, the largest number of deaths occurred in the 30-39 year old age group. However, in recent years, the largest number of deaths has shifted to the 40-49 year old age group. The 50-59 year old age group had the second largest number of deaths.

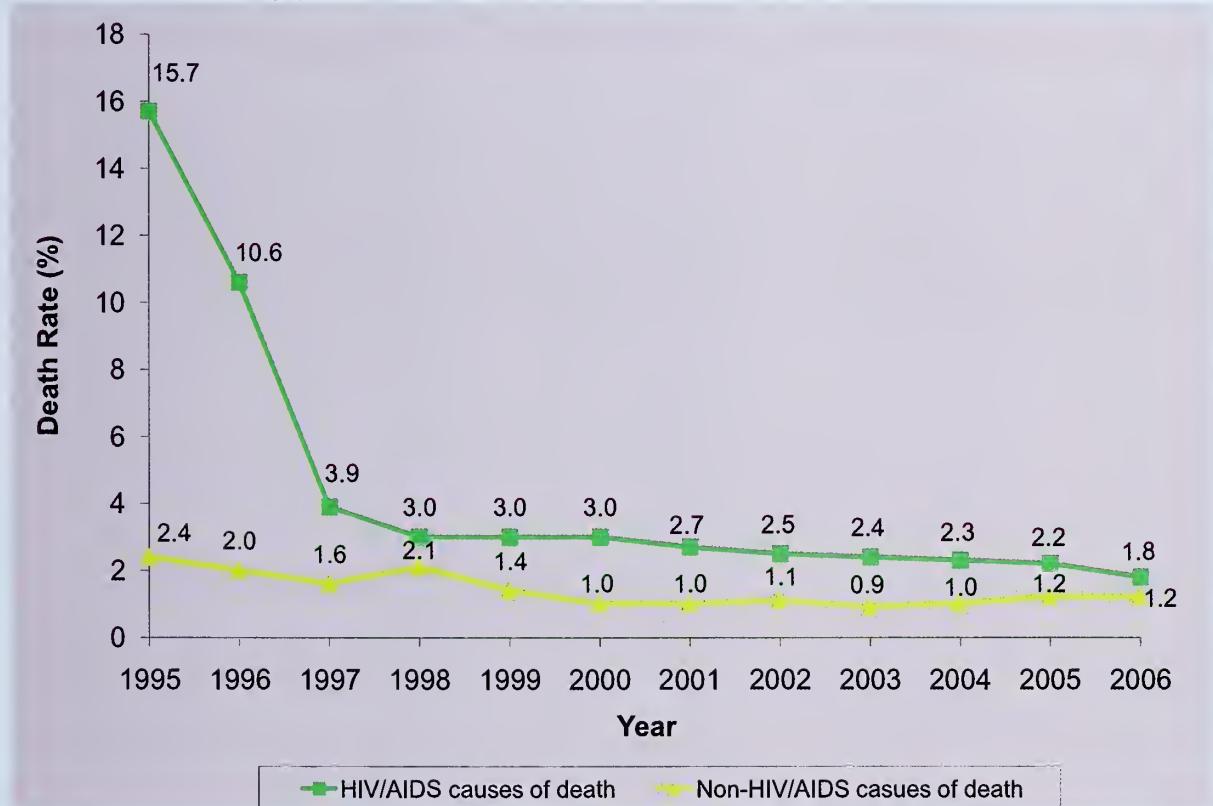
Table 5.1 Deaths in persons with AIDS, by demographic and risk characteristics, 2005-2008, San Francisco

	Year of Death					Cumulative Totals as of 12/31/2008		
	2005		2006		2007*			
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Gender								
Male	274	(88)	241	(85)	182	(88)	128	(80)
Female	28	(9)	32	(11)	16	(8)	21	(13)
Transgender	11	(4)	12	(4)	9	(4)	11	(7)
Race/Ethnicity								
White	183	(58)	179	(63)	128	(62)	102	(64)
African American	87	(28)	59	(21)	43	(21)	36	(23)
Latino	29	(9)	28	(10)	27	(13)	17	(11)
Other	14	(4)	19	(7)	9	(4)	5	(3)
Exposure Category								
MSM	165	(53)	159	(56)	112	(54)	82	(51)
IDU	63	(20)	50	(18)	39	(19)	26	(16)
MSM IDU	70	(22)	63	(22)	48	(23)	43	(27)
Heterosexual	6	(2)	6	(2)	6	(3)	4	(3)
Other/Unknown	9	(3)	7	(2)	2	(1)	5	(3)
Age at Death (years)								
0 - 29	3	(1)	1	(0)	6	(3)	1	(1)
30 - 39	39	(12)	32	(11)	19	(9)	11	(7)
40 - 49	130	(42)	119	(42)	70	(34)	57	(36)
50 - 59	93	(30)	95	(33)	66	(32)	59	(37)
60+	48	(15)	38	(13)	46	(22)	32	(20)
Total	313	(100)	285	(100)	207	(100)	160	(100)
								18,866

* Data are incomplete due to reporting delay. In addition, deaths that occurred outside of San Francisco are primarily identified through matching with the National Death Index (NDI) which is complete only through 2006.

The trend in death rates in persons with AIDS was examined according to the single, underlying cause of death for each person. The death rate due to HIV/AIDS-related causes declined from 15.7 per 100 persons per year with AIDS in 1995 to 1.8 per 100 persons with AIDS in 2006. The drop in death rates beginning in 1996 reflects the impact of highly active antiretroviral therapies. For non-HIV/AIDS-related causes, the death rate in 1995 was 2.4 per 100 persons with AIDS, declining to 1.2 per 100 persons with AIDS in 2006.

Figure 5.1 Death rates* due to HIV/AIDS-related and non-HIV/AIDS-related causes among persons with AIDS, 1995-2006, San Francisco



* Death rates are calculated as the number of persons with AIDS who died each year divided by the number of total AIDS cases for that year. See Technical Notes for "Causes of Death."

Trends in HIV/AIDS Mortality

The proportion of deaths in which HIV/AIDS was listed as the underlying cause of death decreased from 81% of AIDS deaths occurring in 1995-1998 to 66% in 2003-2006 (Table 5.2). Other frequently occurring underlying causes of death in 2003-2006 include non-AIDS cancer (9.0%) and heart disease (5.9%). The proportion of deaths associated with substance abuse (drug overdose, mental disorders due to substance use), and the proportion of deaths due to suicide and chronic obstructive lung disease increased over time.

Table 5.2 Underlying causes of death among persons with AIDS*, 1995-2006, San Francisco

Underlying Cause of Death [#]	Year of Death					
	1995-1998 N= 3,215		1999-2002 N= 1,295		2003-2006 N= 1,161	
	Number	(%)	Number	(%)	Number	(%)
HIV/AIDS	2,587	(80.5)	927	(71.6)	767	(66.1)
Non-AIDS cancer	80	(2.5)	82	(6.3)	105	(9.0)
Lung cancer	19	(0.6)	25	(1.9)	33	(2.8)
Liver cancer	9	(0.3)	16	(1.2)	22	(1.9)
Anal cancer	3	(0.1)	7	(0.5)	4	(0.3)
Heart disease	61	(1.9)	60	(4.6)	68	(5.9)
Coronary heart disease	20	(0.6)	38	(2.9)	36	(3.1)
Cardiomyopathy	6	(0.2)	9	(0.7)	10	(0.9)
Liver disease	28	(0.9)	32	(2.5)	21	(1.8)
Liver cirrhosis	9	(0.3)	14	(1.1)	14	(1.2)
Alcoholic liver disease	10	(0.3)	15	(1.2)	6	(0.5)
Drug overdose	54	(1.7)	33	(2.5)	40	(3.4)
Mental disorders due to substance use	16	(0.5)	17	(1.3)	24	(2.1)
Suicide	34	(1.1)	23	(1.8)	29	(2.5)
Chronic obstructive lung disease	18	(0.6)	13	(1.0)	22	(1.9)
Cerebrovascular disease	12	(0.4)	13	(1.0)	8	(0.7)
Viral hepatitis	73	(2.3)	12	(0.9)	7	(0.6)
Septicemia	8	(0.2)	3	(0.2)	4	(0.3)
Renal disease	7	(0.2)	3	(0.2)	2	(0.2)
Aspergillosis	48	(1.5)	0	(0.0)	0	(0.0)

* Deceased AIDS cases without cause of death information are not represented in this table.

See Technical Notes "Causes of Death."

Table 5.3 shows both underlying and contributory causes of death among persons with AIDS. In each time period, HIV/AIDS-related causes contributed to more than 82% of deaths in AIDS cases. In the time periods 1999-2002 and 2003-2006, the proportion of deaths from liver disease, pneumonia and aspergillosis declined. Deaths due to non-AIDS cancers showed the largest relative increase between time periods 1999-2002 and 2003-2006.

Table 5.3 Multiple causes of death among persons with AIDS*, 1995-2006, San Francisco

Multiple Causes of Death[#]	Year of Death		
	1995-1998		1999-2002
	N = 3,215	No. (%)	N = 1,295
HIV/AIDS	2,971 (92.4)	1,103 (85.2)	957 (82.4)
Heart disease	483 (15.0)	252 (19.5)	230 (19.8)
Coronary heart disease	38 (1.2)	62 (4.8)	65 (5.6)
Cardiomyopathy	43 (1.3)	32 (2.5)	24 (2.1)
Liver disease	218 (6.8)	206 (15.9)	160 (13.8)
Liver cirrhosis	73 (2.3)	79 (6.1)	74 (6.4)
Alcoholic liver disease	17 (0.5)	18 (1.4)	9 (0.8)
Viral hepatitis	125 (3.9)	163 (12.6)	159 (13.7)
Pneumonia	496 (15.4)	200 (15.4)	152 (13.1)
Non-AIDS cancer	209 (6.5)	117 (9.0)	154 (13.3)
Lung cancer	22 (0.7)	27 (2.1)	36 (3.1)
Liver cancer	12 (0.4)	20 (1.5)	24 (2.1)
Anal cancer	5 (0.2)	9 (0.7)	8 (0.7)
Septicemia	219 (6.8)	123 (9.5)	134 (11.5)
Renal disease	133 (4.1)	105 (8.1)	123 (10.6)
Mental disorders due to substance use	62 (1.9)	70 (5.4)	84 (7.2)
Chronic obstructive lung disease	56 (1.7)	42 (3.2)	60 (5.2)
Drug overdose	64 (2.0)	45 (3.5)	47 (4.0)
Cerebrovascular disease	47 (1.5)	40 (3.1)	35 (3.0)
Suicide	34 (1.1)	23 (1.8)	29 (2.5)
Aspergillosis	69 (2.1)	17 (1.3)	7 (0.6)

* Deceased AIDS cases without cause of death information are not represented in this table.

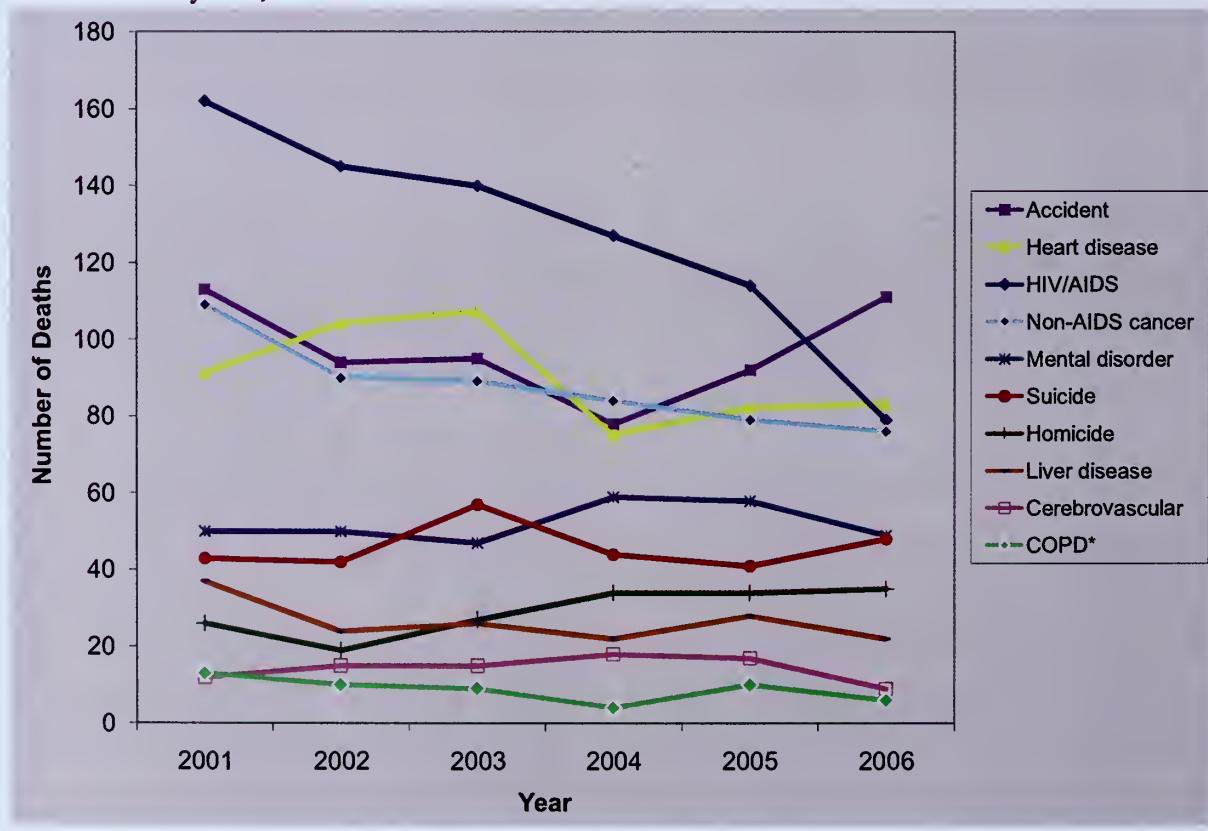
Includes underlying and contributory causes of death. Individuals may have more than one cause of death. See Technical Notes "Causes of Death."

Trends in HIV/AIDS Mortality

Vital statistics death data

We examined the data obtained from the California Vital Statistics Death Files for San Francisco residents who died from 2001 to 2006 to compare the number of deaths and death rates by gender, race/ethnicity and age. The leading cause of death was determined using ICD-10 codes representing the underlying cause of death, which is consistent with the National Vital Statistics Reports. Until 2005, HIV/AIDS had been the leading cause of death for men aged 25-54 years in San Francisco. However, accidents surpassed HIV/AIDS to become the leading cause of death in 2006 (Figure 5.2) while HIV/AIDS dropped to the third leading cause of death. This was due in part to a steady decrease in the number of deaths due to HIV/AIDS during this time period in conjunction with an increase in accidents starting in 2004.

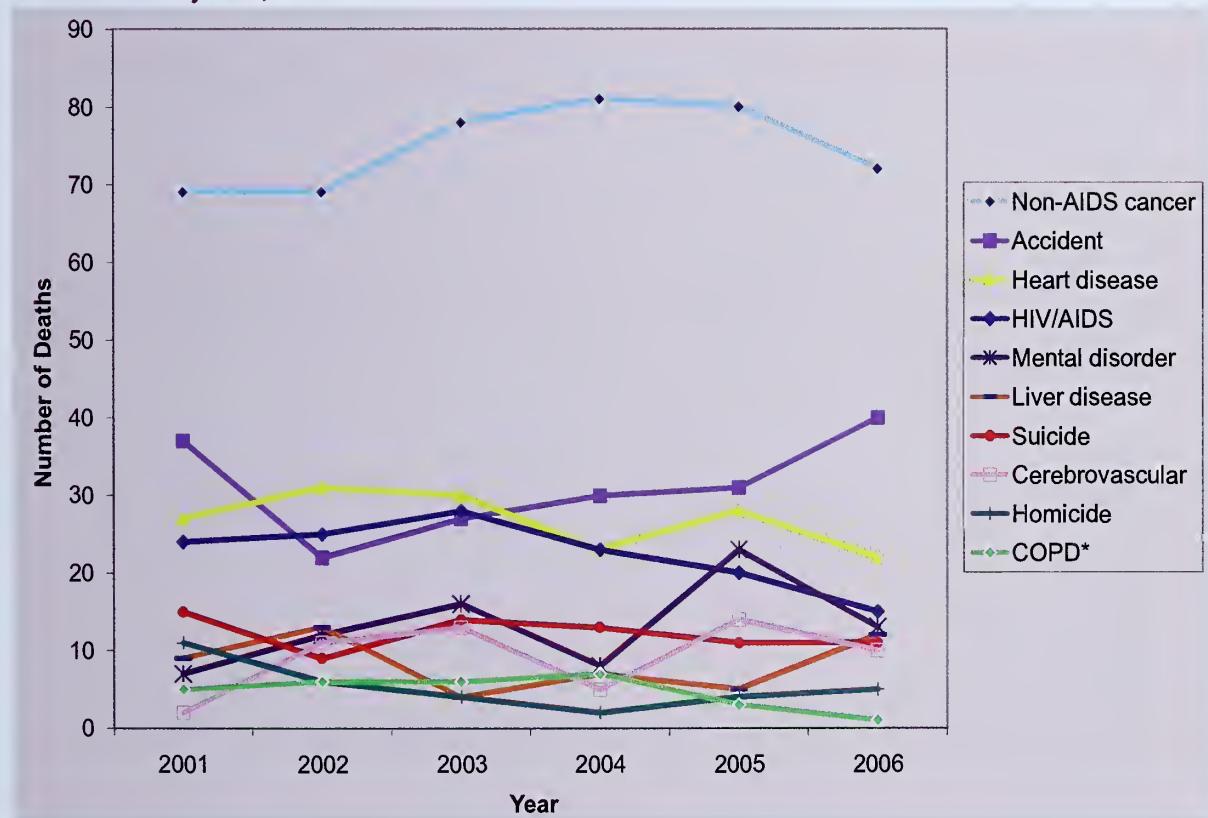
Figure 5.2 Leading causes of death among San Francisco male residents aged 25-54 years, 2001-2006



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Deaths due to HIV/AIDS among San Francisco women were significantly lower than among their male counterparts. Among those aged 25-54 years in 2006, the number of deaths among males due to HIV/AIDS (n=79) was approximately five times higher than the number of deaths among females (n=15). In recent years, the greatest number of deaths attributed to HIV/AIDS among women occurred in 2003 (Figure 5.3). Deaths due to HIV/AIDS decreased slightly thereafter to become the fourth leading cause of death among women in 2006. Non-AIDS related cancer remained the leading cause of death among women aged 25-54 years from 2001 to 2006.

Figure 5.3 Leading causes of death among San Francisco female residents aged 25-54 years, 2001-2006

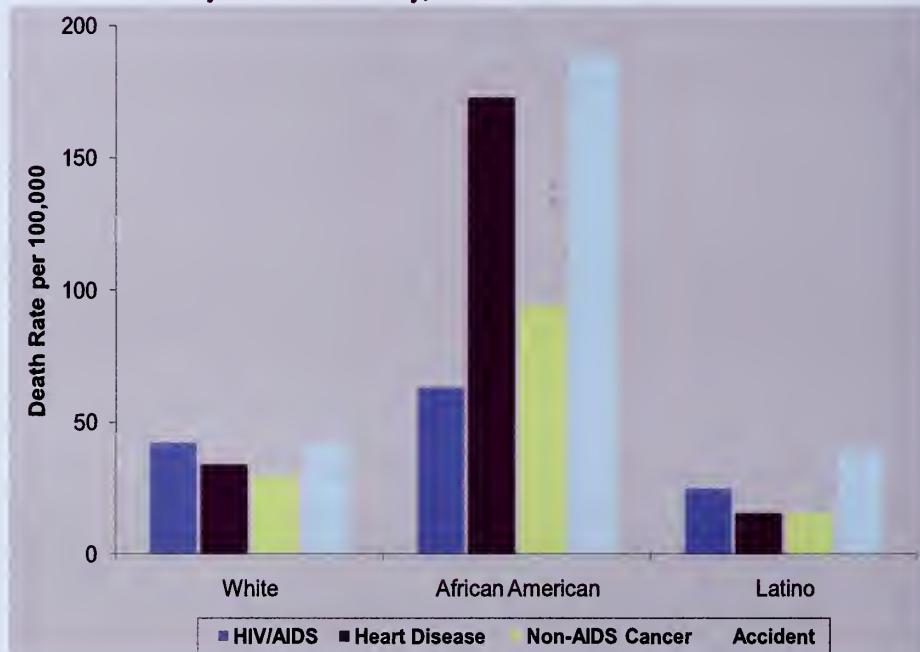


* COPD: chronic obstructive pulmonary disease.

Trends in HIV/AIDS Mortality

In 2006, African American males suffered from higher death rates from the top four leading causes of death than did Latino and white men (Figure 5.4). The greatest discrepancy was observed for deaths due to accidents and heart disease. The HIV/AIDS death rate for African Americans (63 per 100,000) was about 2.5 times greater than the death rate among Latino men (25 per 100,000) and 1.5 times greater than the death rate among whites (42 per 100,000). HIV/AIDS is the second leading cause of death among both whites and Latinos.

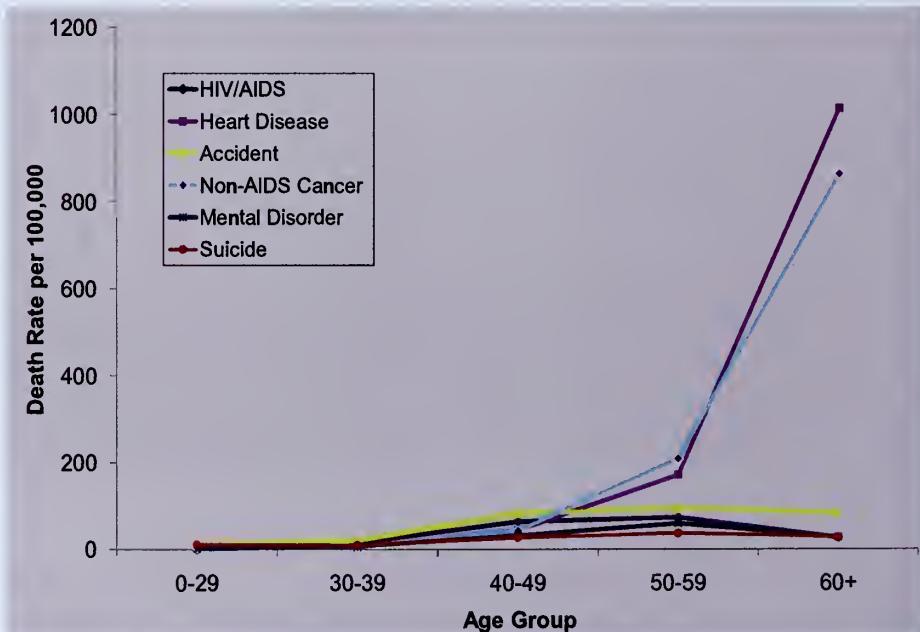
Figure 5.4 Leading causes of death rates per 100,000 population among San Francisco male residents* aged 25-54 years by race/ethnicity, 2006



* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file

Figure 5.5 illustrates the age-specific death rates among male San Francisco residents. Accidents were the leading cause of death among men under 50. The HIV/AIDS related death rate was the greatest among those aged 50-59 (73 per 100,000) followed by those aged 40-49 (64 per 100,000). Men over age 50 died at a higher rate due to chronic conditions such as heart disease and non-AIDS cancer.

Figure 5.5 Leading causes of death rates per 100,000 population among San Francisco male residents* by age group, 2006



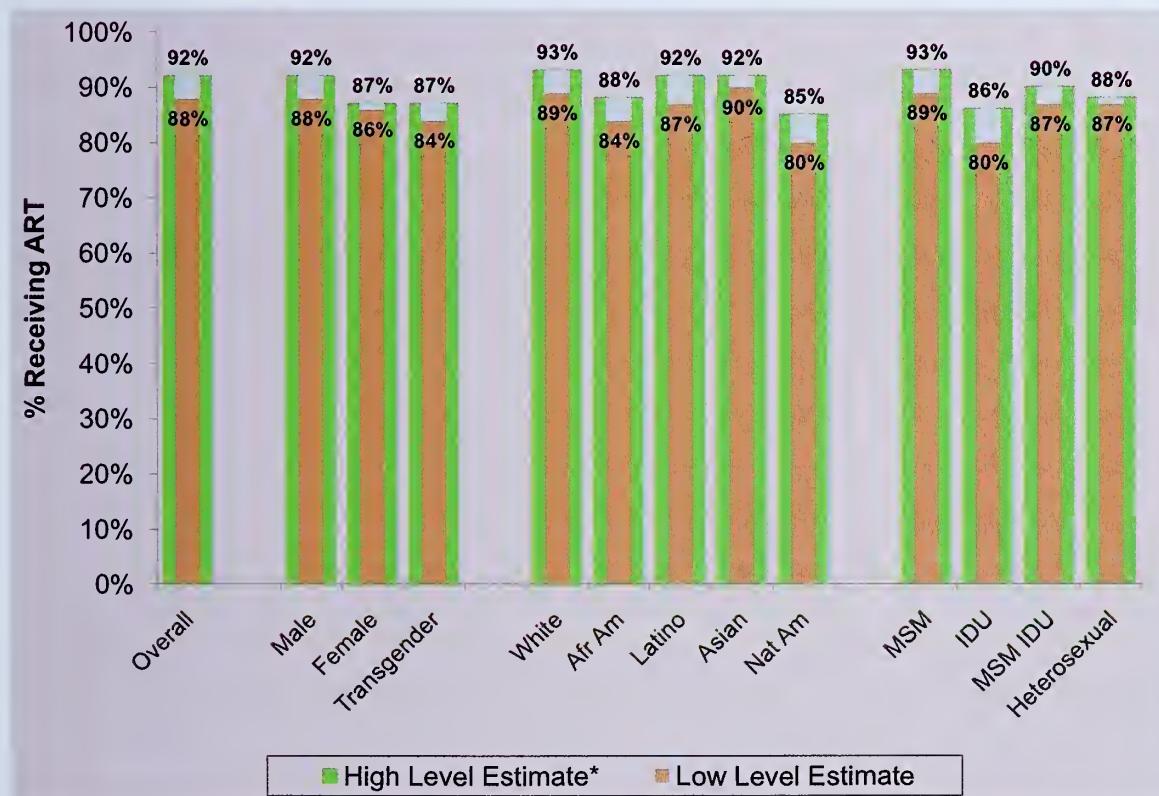
* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file

6

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Figure 6.1 shows an estimate of antiretroviral therapy (ART) use among persons living with AIDS as of December 31, 2008. Information on ART is obtained from medical chart review and persons who have been prescribed ART are assumed to have received it. The lower percentage shown in the figure provides the crude estimate of ART use among all persons living with AIDS. The higher percentage, including the grey area, was calculated among persons who have had follow-up information within the last two years and are not known to have moved out of San Francisco. Because this calculation excludes persons who moved or who have been lost-to-follow-up (whose treatment information may be incomplete), it provides an upper level estimate of ART use. Overall, 88%-92% of persons living with AIDS received ART. ART use was lower among females, transgender persons, African Americans, Native Americans and injection drug users.

Figure 6.1 Estimate of antiretroviral therapy use among persons living with AIDS by gender, race/ethnicity, and exposure category, December 2008, San Francisco

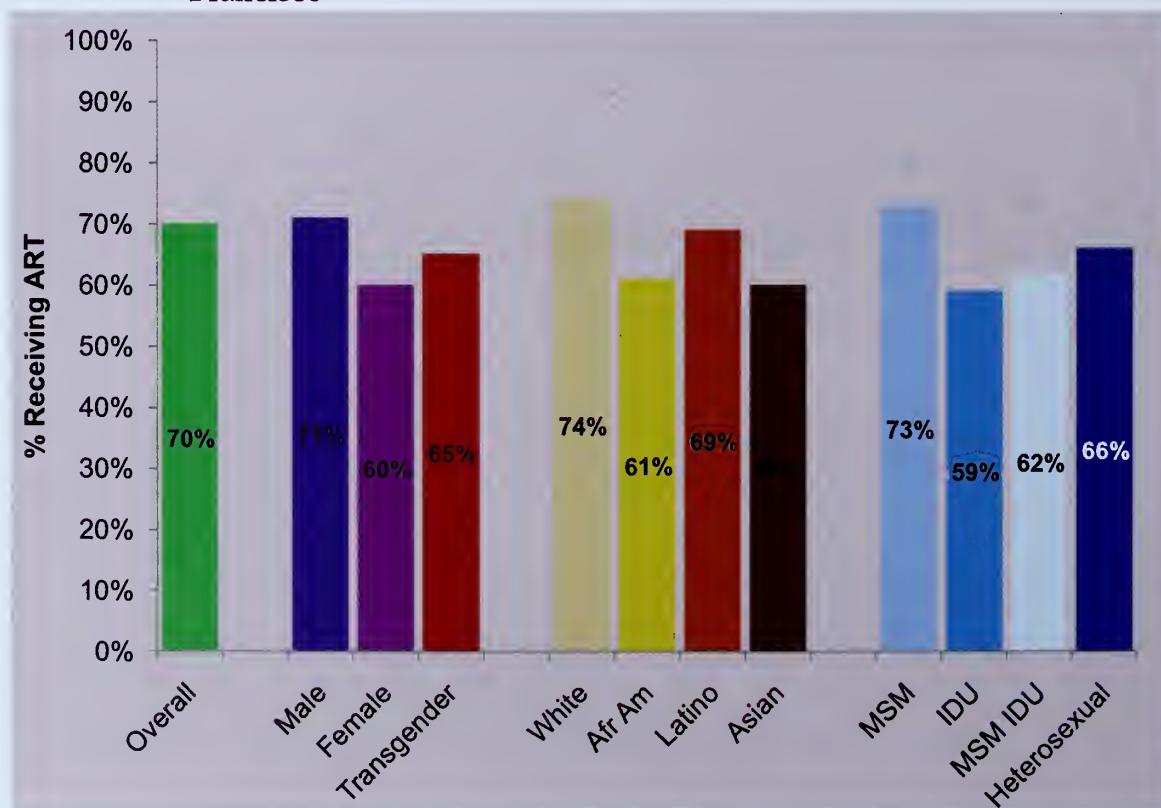


* Top value of percentage (including the grey area) indicates the proportion of ART use after excluding persons who were lost-to-follow-up.

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Figure 6.2 shows use of ART among persons living with HIV who have not progressed to AIDS and have a CD4 count between 200 and 350 cells/ μL (the current eligibility criteria for ART use in the U.S.) at any point after their HIV diagnosis. As of December 31, 2008, there were a total of 6,508 persons living with HIV non-AIDS. Of these, 90% have at least one CD4 count available and 75% have a CD4 count obtained within 12 months after their HIV diagnosis. Thirty-seven percent, or 2,424, of living HIV cases met the eligibility criteria for ART use. Overall, 70% of persons with HIV non-AIDS, who were eligible for treatment, received ART. Disparity in ART use is apparent, with females and transgender persons being less likely to receive ART than males. People of color were also less likely to receive ART. Information for Native Americans is not listed due to small numbers. Injection drug users have the lowest proportion of ART use.

Figure 6.2 Use of antiretroviral therapy among persons living with HIV non-AIDS by gender, race/ethnicity, and exposure category, December 2008, San Francisco



7

Insurance Status at Time of HIV/AIDS Diagnosis

The insurance status at time of AIDS diagnosis differs among men, women, and transgender persons. The proportion of men with private insurance was stable between 2003 and 2008 and was consistently higher than the proportions of women and transgender persons with private insurance (Figure 7.1). Among women and transgender persons, over 40% had public insurance, and among women, this proportion has increased since 2003.

For AIDS cases diagnosed between 2003 and 2008, 94% of transgenders and 86% of women had no insurance or public insurance, compared to 54% of men (Figure 7.2).

Figure 7.1 Trends in insurance status among persons with AIDS by gender, 2003-2008, San Francisco

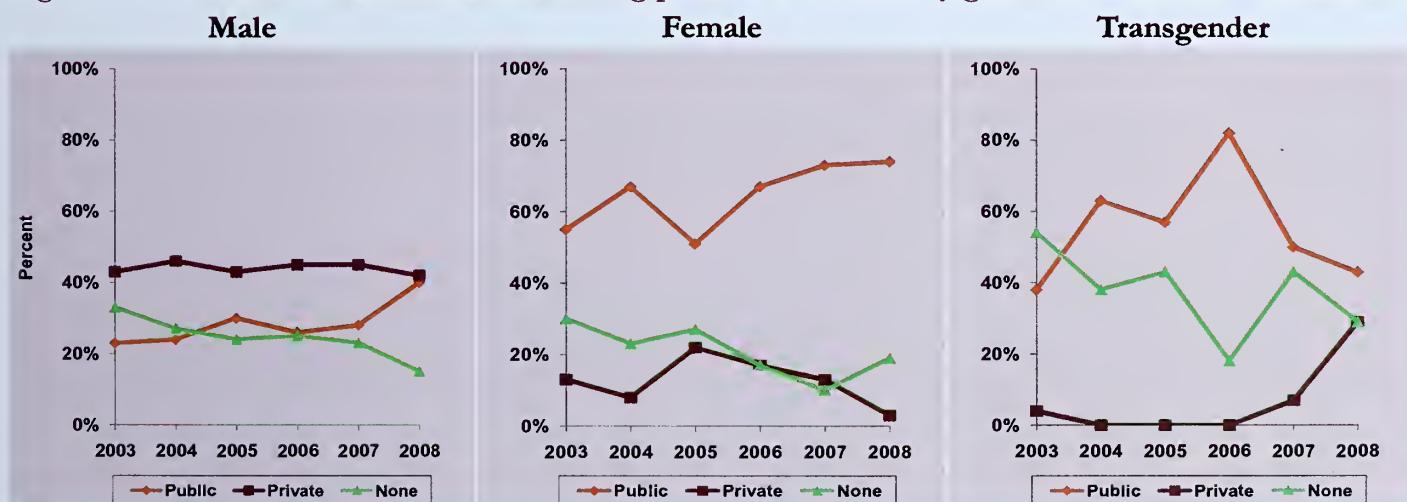
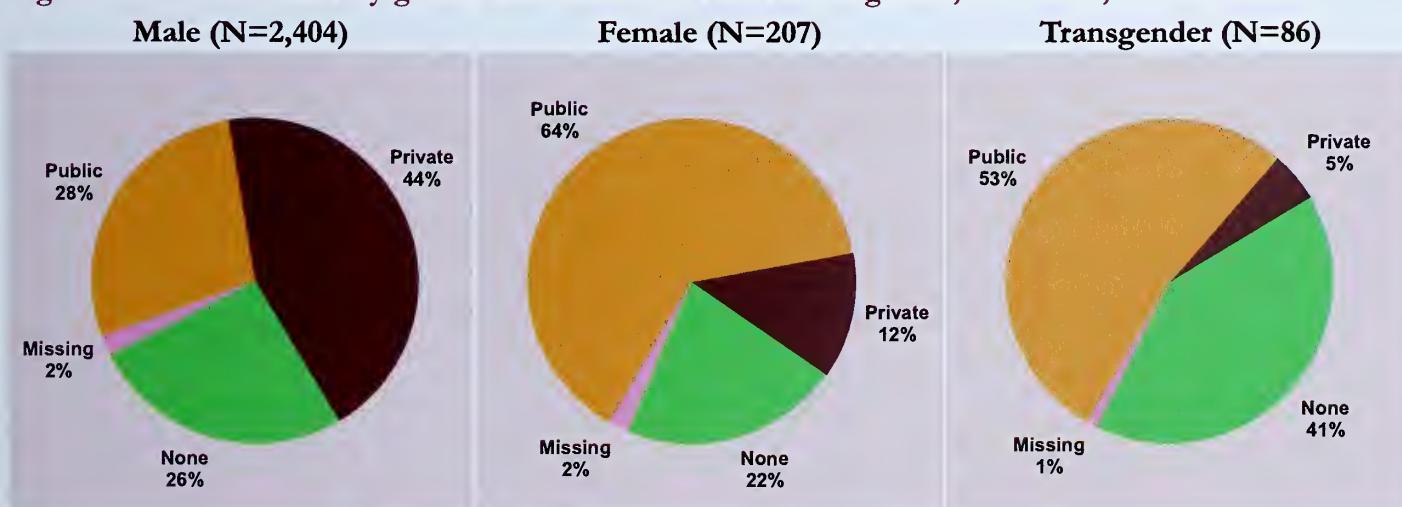


Figure 7.2 AIDS cases by gender and insurance status at diagnosis, 2003-2008, San Francisco

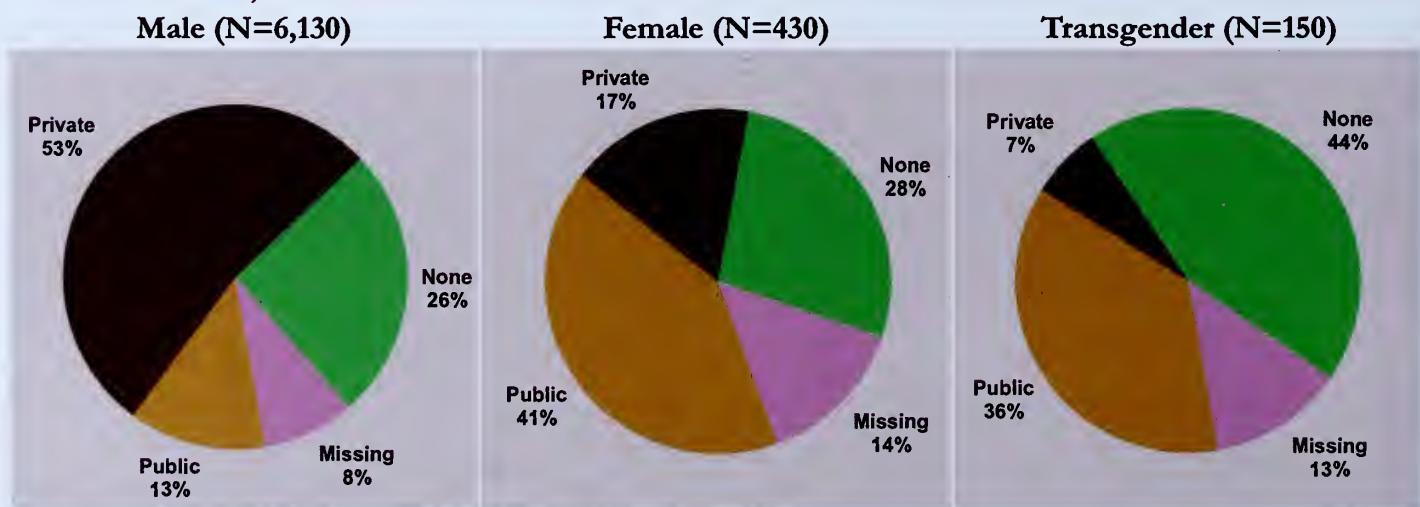


Insurance Status at Time of HIV/AIDS Diagnosis

We examined the insurance status for persons with HIV infection who had not progressed to AIDS (HIV non-AIDS) reported between 2003 and 2008, which includes cases diagnosed before and during this time period. Compared to AIDS cases (Figure 7.2), a higher proportion of HIV non-AIDS cases had private insurance at the time of HIV diagnosis (Figure 7.3). In addition, a greater percentage of HIV non-AIDS cases did not have insurance status available. HIV non-AIDS cases without insurance information reported were those whose follow-up information could not be obtained from the health care providers.

Similar to AIDS cases, there were differences in insurance status by gender for HIV non-AIDS cases. Thirty-nine percent of male HIV non-AIDS cases were under-insured, compared to 69% of female and 80% of transgender HIV non-AIDS cases (Figure 7.3).

Figure 7.3 HIV non-AIDS cases by gender and insurance status at diagnosis, cases reported in 2003-2008, San Francisco



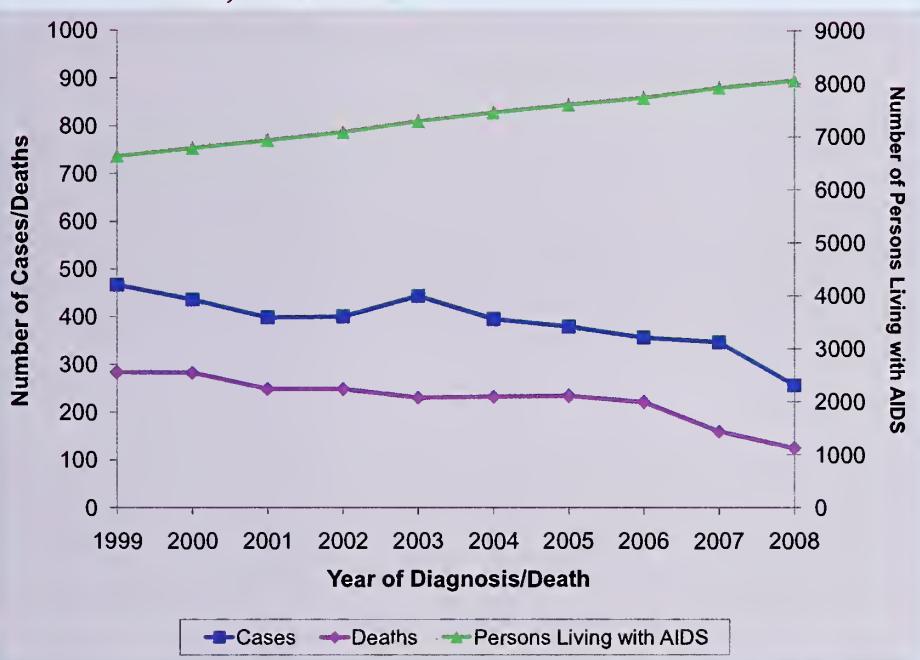
8

HIV/AIDS among Men Who Have Sex with Men

AIDS surveillance data

Over the last decade, numbers of AIDS cases and AIDS deaths declined among MSM while the number of MSM living with AIDS increased. Between 2003 and 2005, deaths among MSM were stable (Figure 8.1). In 2008, there were 8,051 MSM living with AIDS in San Francisco.

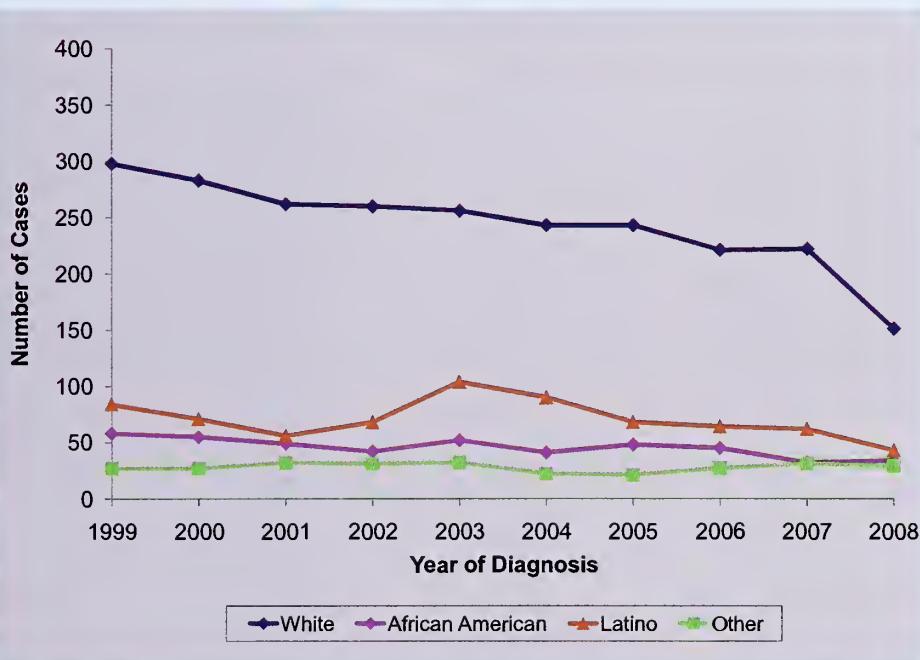
Figure 8.1 AIDS cases, deaths, and prevalence among MSM*, 1999-2008, San Francisco



* Includes MSM and MSM IDU.

The majority of San Francisco's MSM AIDS cases are white (Figure 8.2). Since 1999, the second most frequent racial/ethnic group among MSM AIDS cases was Latinos. In 2008, there were 151 white MSM, 43 Latino MSM, and 34 African American MSM diagnosed with AIDS in San Francisco.

Figure 8.2 AIDS cases among MSM* by race/ethnicity, 1999-2008, San Francisco



* Includes MSM and MSM IDU.

HIV/AIDS among Men Who Have Sex with Men

HIV sexual behavior data

The Stop AIDS Project collects information on sexual behavior and self-reported HIV status in the course of outreach prevention activities for MSM in San Francisco. Their data provide an opportunity to track trends in HIV-related risk behavior in a large, community-recruited sample of MSM. Such data may not be representative of all MSM in San Francisco.

Figure 8.3 shows trends in unprotected anal intercourse (UAI) from 1999 through 2008 by self-reported HIV serostatus. Among HIV-positive MSM, the percent reporting UAI fluctuates but generally shows an upward trend over the decade, and an apparent drop in the most recent year. Among HIV-negative MSM, UAI has shown a more steady increase over the last 10 years.

Figure 8.4 shows the proportion of MSM who reported UAI with sex partners whose HIV status was not known to them. This measure gauges the potential for HIV transmission by excluding sex between individuals known to be of the same HIV status. Overall, UAI between potentially HIV-serodiscordant men peaked in 2001. Potentially serodiscordant UAI reached a low in 2004 for HIV-negative MSM and in 2005 for HIV-positive MSM. Serodiscordant UAI appears to have leveled off, with fluctuation, in recent years.

Figure 8.3 Percent of MSM reporting unprotected anal intercourse in the last six months by self-reported HIV status, the Stop AIDS Project, 1999-2008, San Francisco

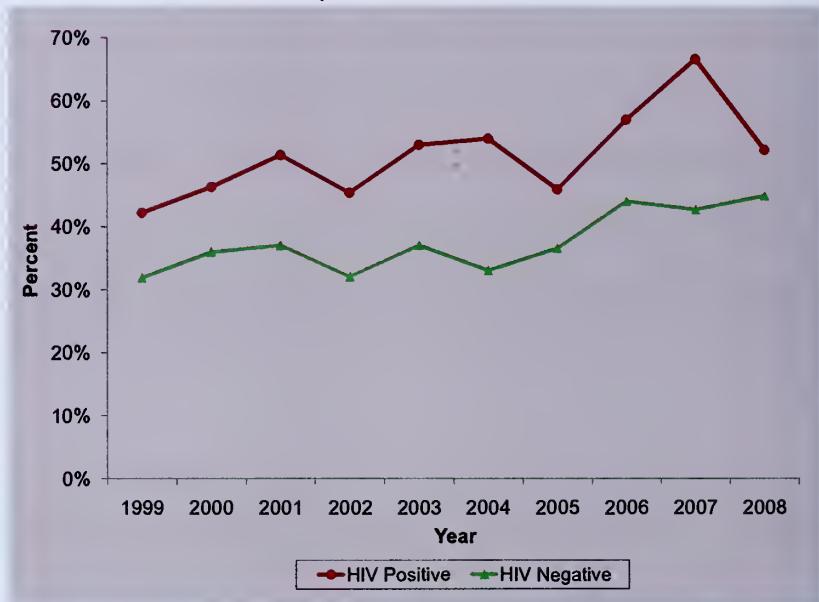
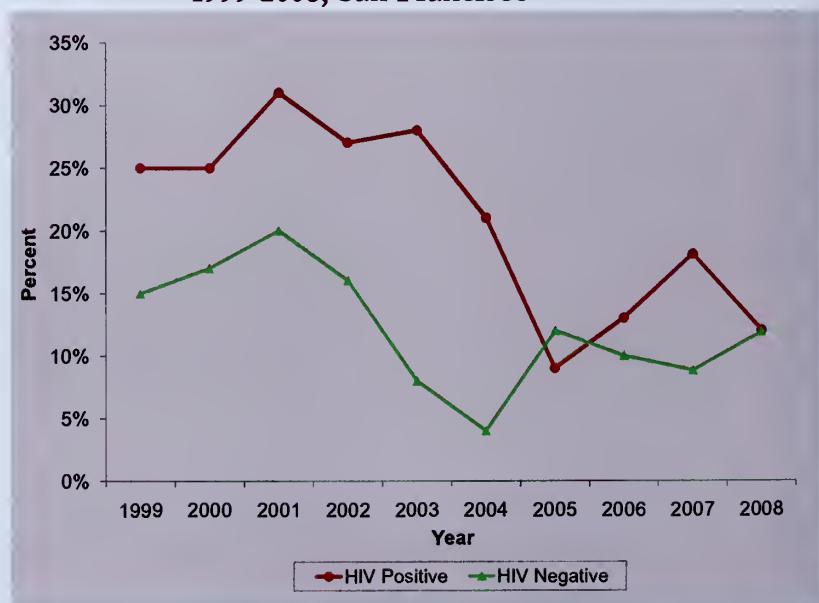
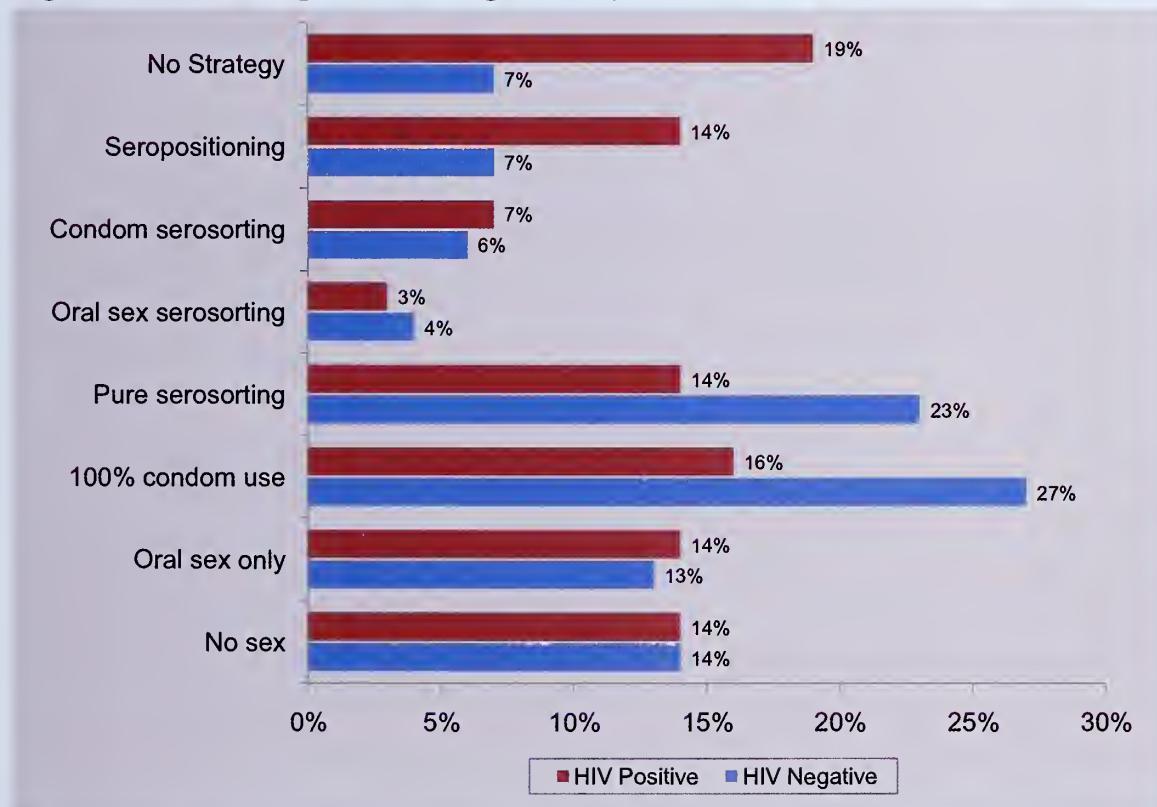


Figure 8.4 Percent of MSM reporting unprotected anal intercourse in the last six months with at least one partner of unknown HIV status by self-reported HIV status, the Stop AIDS Project, 1999-2008, San Francisco



“Seroadaptation” broadly includes a range of sexual practices that may reduce the risk of HIV transmission that are guided by knowledge of one’s own and one’s sexual partners’ HIV serostatus. Figure 8.5 shows the prevalence of several seroadaptive strategies measured in a community-based sample of MSM. Data originate from a National Institutes of Health (NIH)-funded randomized, venue-based survey of MSM in San Francisco which included 1,212 MSM describing 2,717 partnerships of HIV-negative MSM and 762 partnerships of HIV-positive MSM. Consistent 100% condom use was reported by 27% of HIV-negative MSM and 16% of HIV-positive MSM. Having only partners of the same serostatus was reported by 23% of HIV-negative MSM and 14% of HIV-positive MSM. Other seroadaptive strategies include having oral sex only, having only oral sex when the partner is serodiscordant or of unknown serostatus, using condoms when the partner is serodiscordant or of unknown serostatus, and seropositioning. Seropositioning is when the HIV-negative partner has unprotected insertive anal intercourse (“top”) with an HIV-positive partner having receptive anal intercourse (“bottom”). It is not known how effective seroadaptive strategies are in preventing HIV transmission or how well they are adhered to.

Figure 8.5 Seroadaptation among MSM by HIV status, San Francisco, 2008



HIV/AIDS among Men Who Have Sex with Men

Sexually transmitted diseases among MSM

Figure 8.6 shows trends in male rectal gonorrhea and male gonococcal proctitis in San Francisco from 1998 through 2008. Data on male rectal gonorrhea originate from case reporting from laboratories and health providers throughout the city. Data on male gonococcal proctitis originate from the municipal STD clinic only. Infection with gonorrhea is a biological marker for high risk sexual behavior. Among men, rectal gonorrhea is a marker for unprotected receptive anal sex.

The last several years have seen a steady increase in reported cases of male rectal gonorrhea followed by a decrease after 2006. Male gonococcal proctitis are cases with symptomatic infection. Data on male gonococcal proctitis suggest that some of the increase in reported male rectal gonorrhea may be due to increased screening or reporting.

Data may underestimate true levels of infections due to several factors, including lack of rectal screening by many health providers, under reporting, delayed reporting, and a large proportion of cases that do not manifest symptoms.

Figure 8.6 Male rectal gonorrhea and male gonococcal proctitis among MSM, 1998-2008, San Francisco

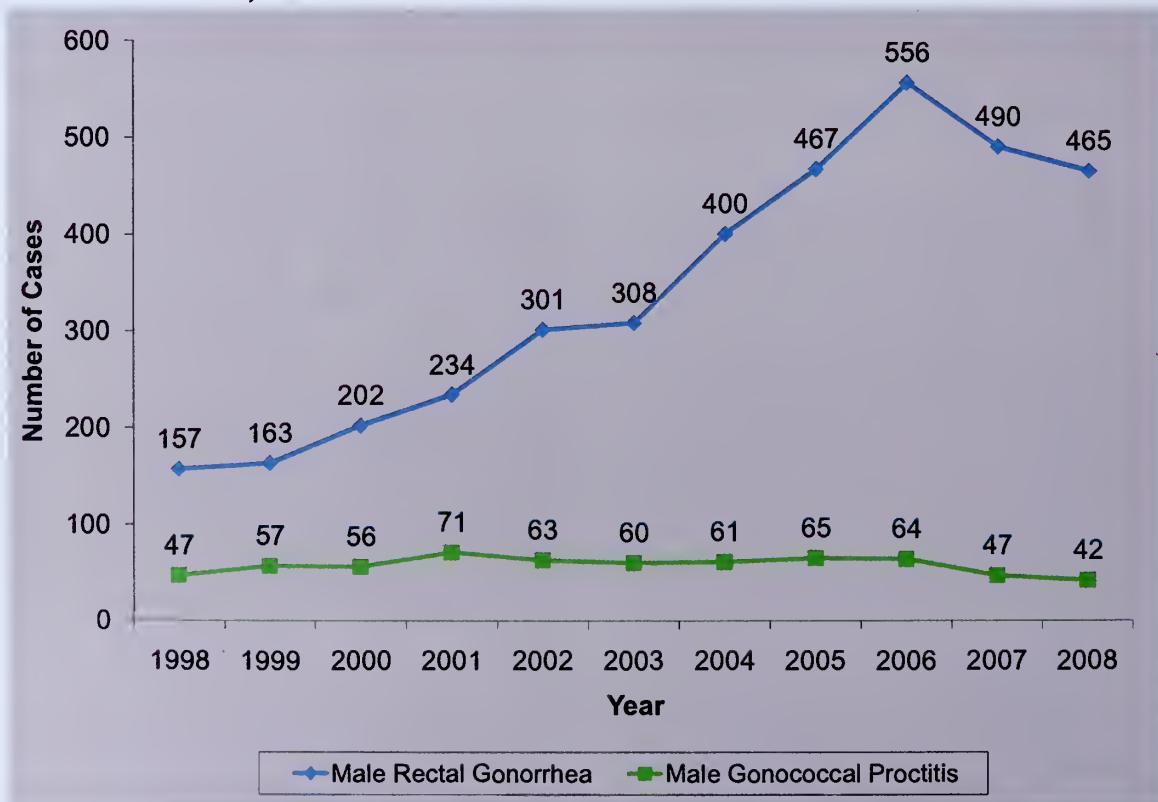
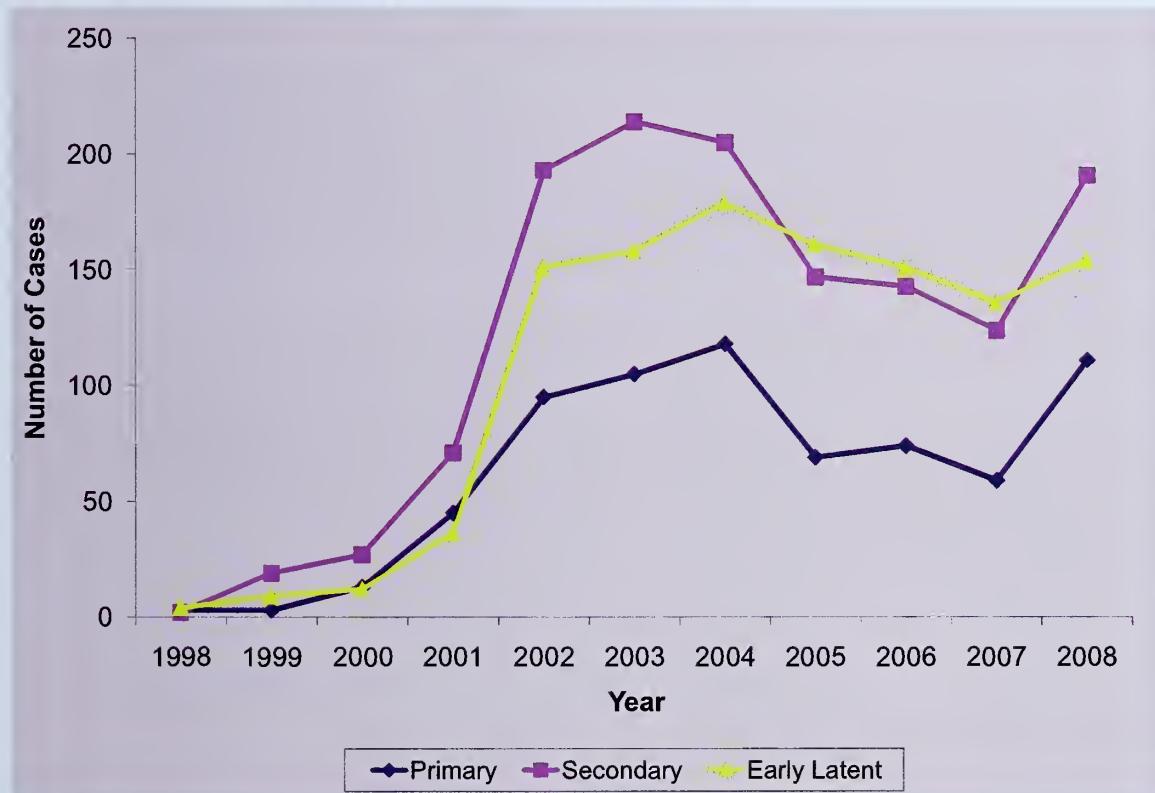


Figure 8.7 shows trends in primary, secondary, and early latent cases of syphilis among MSM in San Francisco from 1998 through 2008. Data originate from case reporting from laboratories and health providers throughout the city although the majority are patients seen at the municipal STD clinic. Like gonorrhea, syphilis is a biological marker for high risk sexual behavior. The increase in early syphilis among MSM in San Francisco since 1998 is dramatic. In 2005, for the first time since this rapid rise, early syphilis among MSM declined. However, in 2008, primary, secondary and early syphilis among MSM began to rise again.

Figure 8.7 Syphilis among MSM, 1998-2008, San Francisco

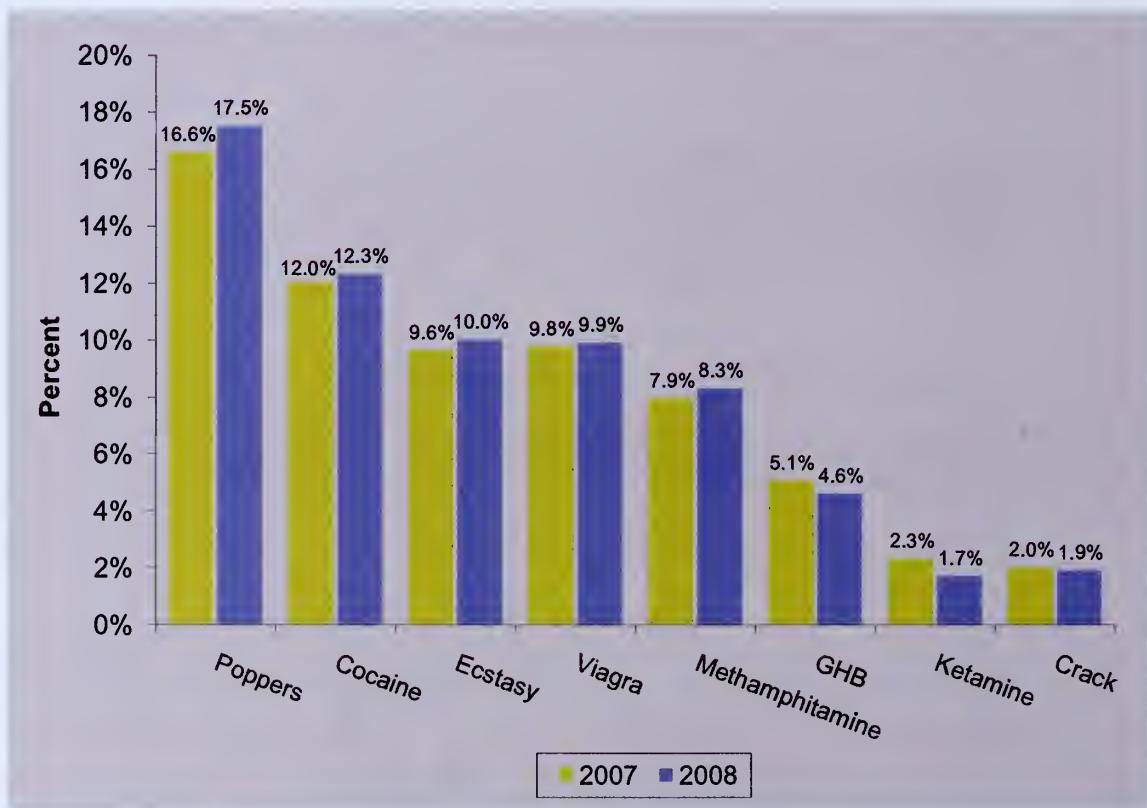


HIV/AIDS among Men Who Have Sex with Men

Substance use

The STOP AIDS Project also records substance use in the last six months among MSM. Overall, the percent reporting use of a variety of drugs in 2008 did not change substantially from 2007 (Figure 8.8).

Figure 8.8 Substance use among MSM, the Stop AIDS Project, 2007-2008, San Francisco



9

HIV/AIDS among Injection Drug Users

Injection drug use by non-MSM is the third most frequent exposure group among cumulative AIDS cases in San Francisco. This differs from national AIDS data where non-MSM IDU is the second most frequent exposure group among all cases. The number of living non-MSM IDU in San Francisco has been fairly level from 2004 to 2008 (Figure 9.1). This is the likely result of similar numbers of deaths and new AIDS cases in recent years. As of December 31, 2008, there were 781 non-MSM IDU living with AIDS in San Francisco.

From 1999 to 2004, African Americans accounted for the greatest number of AIDS cases among non-MSM IDU (Figure 9.2). Since 2005, the number of white non-MSM IDU AIDS cases has been similar to the number of African American non-MSM IDU. Non-MSM IDU who were Latino or of other race/ethnicities accounted for few AIDS cases between 1999 and 2008.

Figure 9.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 1999-2008, San Francisco

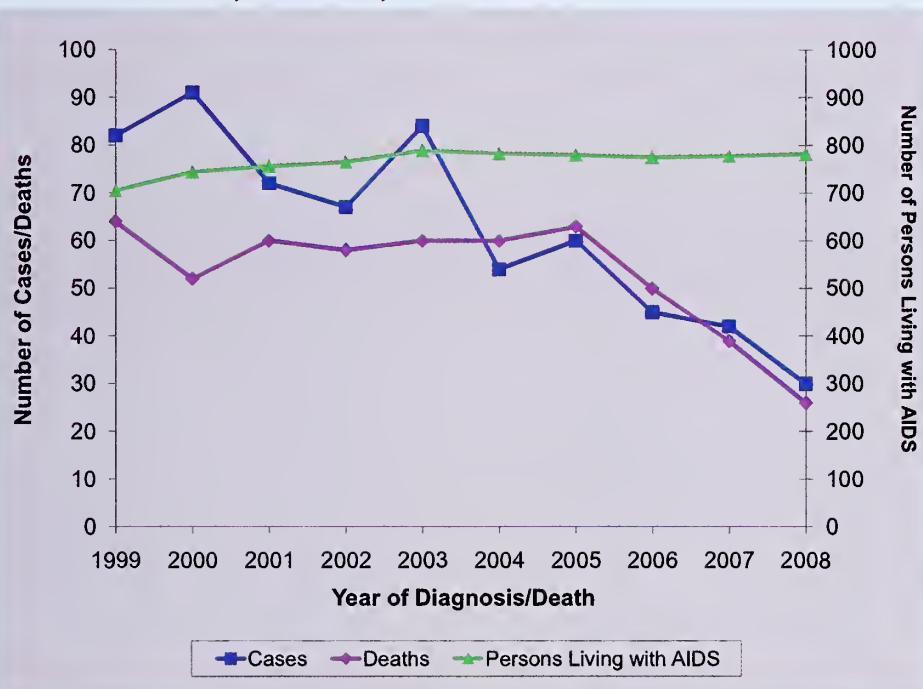


Figure 9.2 AIDS cases among non-MSM IDU by race/ethnicity, 1999-2008, San Francisco

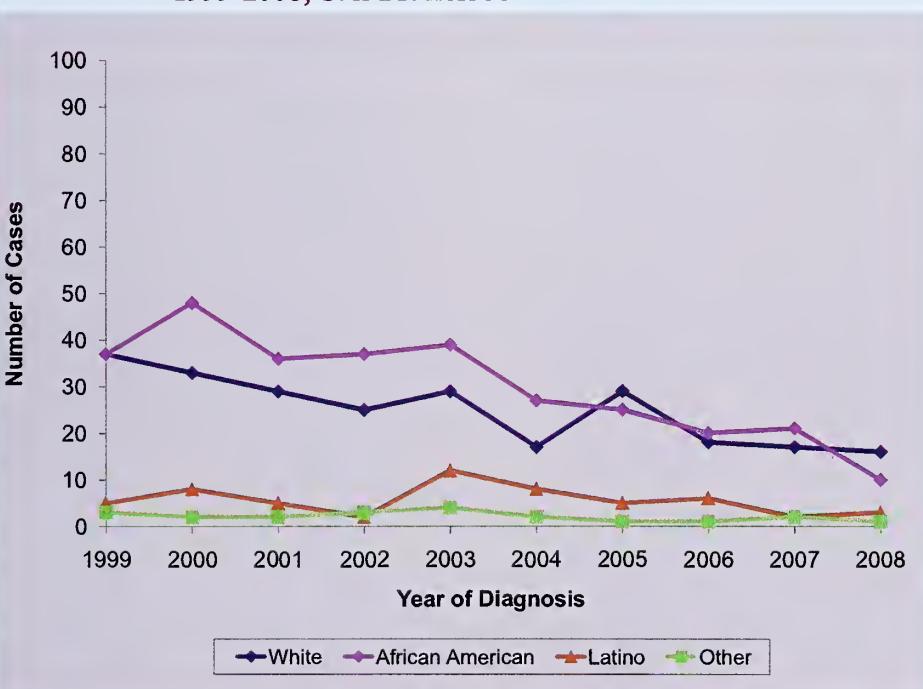


Table 9.1 shows the risk and race/ethnicity distributions of AIDS cases that were directly, or indirectly, associated with injection drug use. MSM IDU account for 64% of all IDU-associated AIDS cases, followed by male heterosexual IDU who account for 22%. Whites make up the largest proportion of MSM IDU and Lesbian IDU, while African Americans account for the largest proportion of IDU-associated AIDS cases in other exposure categories.

Table 9.1 Injection drug use-associated AIDS cases by exposure category and race/ethnicity, diagnosed through December 2008, San Francisco

Exposure Category	Race/Ethnicity Distribution by Percent				
	Total Number	White	African American	Latino	Other
Male heterosexual IDU	1,412	37%	49%	12%	3%
Female heterosexual IDU	682	33%	52%	10%	5%
MSM IDU	4,195	70%	16%	10%	3%
Lesbian IDU	56	46%	38%	11%	5%
Heterosexual contact with IDU	150	33%	43%	15%	9%
Children whose mothers are IDUs or mother's sex partners are IDUs	23	22%	43%	17%	17%

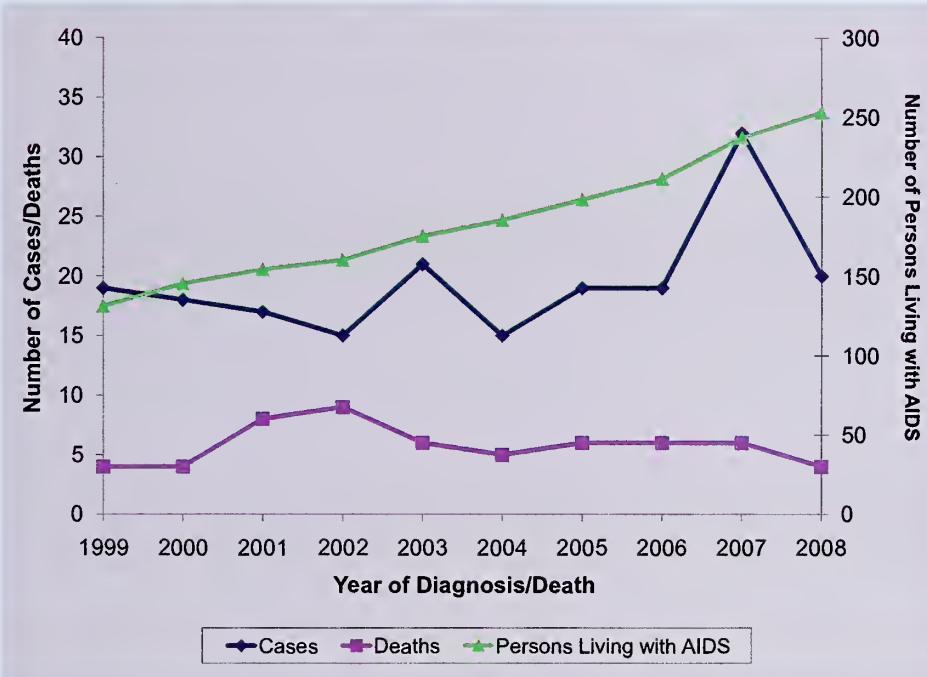
10

HIV/AIDS among Heterosexuals

AIDS surveillance data

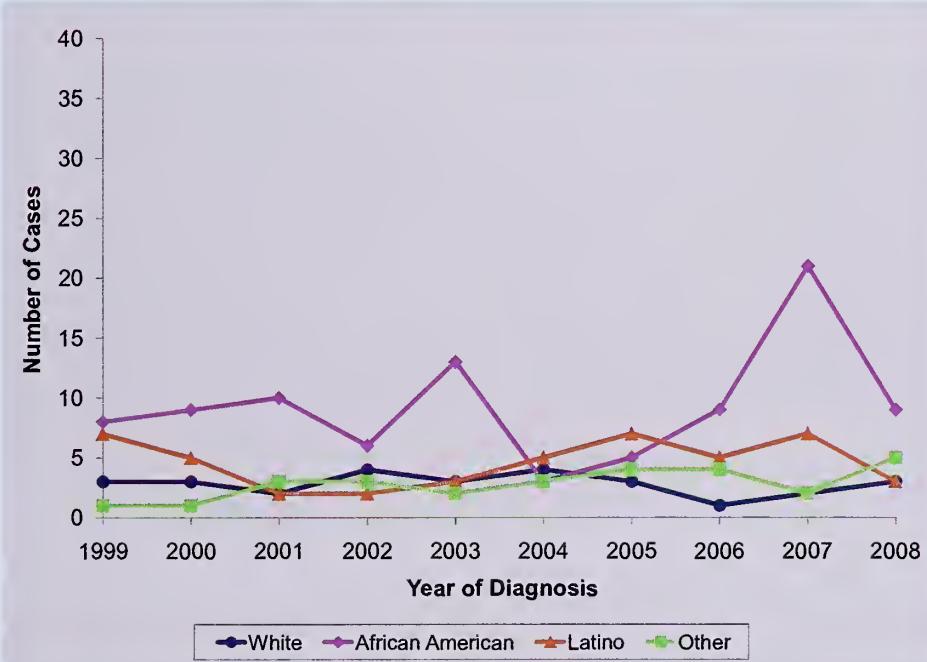
Between 1999 and 2006 the number of AIDS cases among persons who were infected with HIV through heterosexual contact was fairly level (Figure 10.1). Deaths among non-IDU heterosexuals have been stable during the last decade. The number of non-IDU heterosexuals living with AIDS increased to 253 by December 31, 2008.

Figure 10.1 AIDS cases, deaths, and prevalence among heterosexuals, 1999-2008, San Francisco



Trends in heterosexual AIDS cases by race/ethnicity are difficult to characterize due to the small number of cases (Figure 10.2). Overall, African Americans accounted for the greatest number of heterosexual AIDS cases since 1999.

Figure 10.2 AIDS cases among heterosexuals by race/ethnicity, 1999-2008, San Francisco



HIV/AIDS among Heterosexuals

The majority of heterosexually-acquired AIDS cases occurred in women (Table 10.1). Sex with an HIV-infected partner of unknown risk factor was the most frequent exposure category for both men and women, accounting for 71% of men exposed heterosexually and 45% of women exposed heterosexually.

Table 10.1 AIDS cases among heterosexuals by exposure category and gender, diagnosed through December 2008, San Francisco

Exposure Category	Men		Women	
	Number	%	Number	%
Sex with injection drug user	36	27%	114	38%
Sex with bisexual men	N/A	N/A	48	16%
Sex with HIV+ transfusion recipient	<5	-	<5	-
Sex with HIV+ persons of unknown risk	94	71%	134	45%

Sexually transmitted diseases among heterosexuals

Figure 10.4 shows the annual number of primary, secondary, and early latent cases of syphilis among heterosexual men in San Francisco from 1998 through 2008. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Compared to MSM, syphilis among heterosexual men remains relatively low in recent years but with an increase in 2008.

Figure 10.4 Syphilis among heterosexual men, 1998-2008, San Francisco

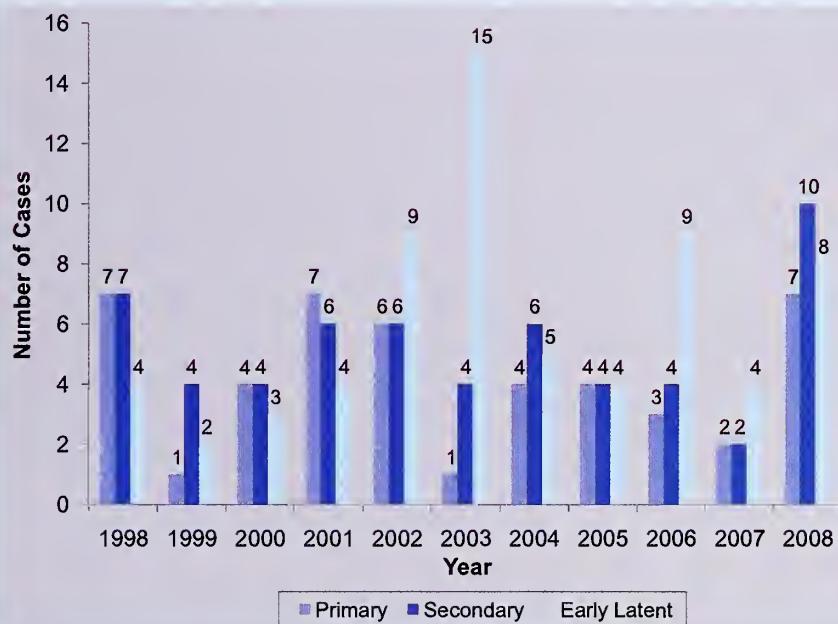
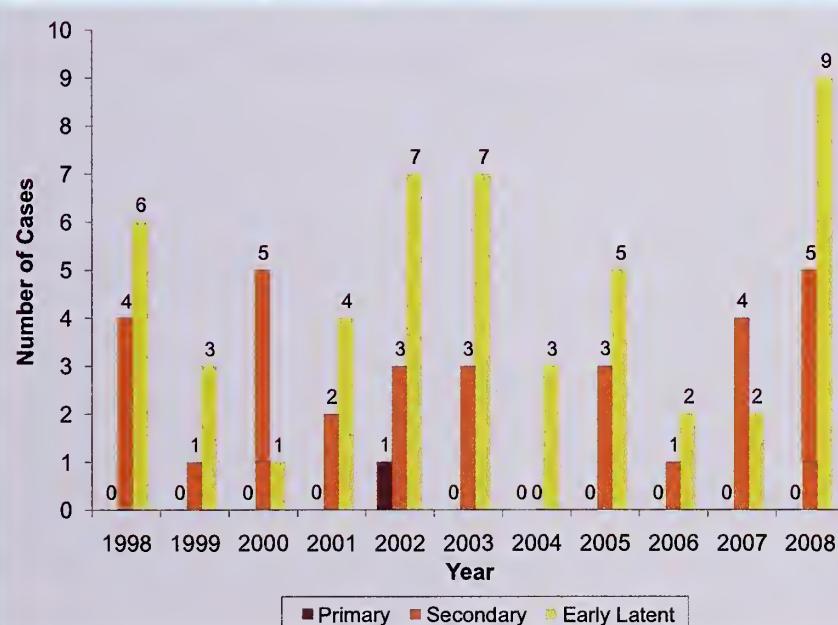


Figure 10.5 shows the annual number of primary, secondary, and early latent cases of syphilis among women in San Francisco from 1998 through 2008. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Among women, syphilis cases have been low and stable in recent years, with an increase in 2008 in secondary and early latent syphilis cases.

Figure 10.5 Syphilis among women, 1998-2008, San Francisco

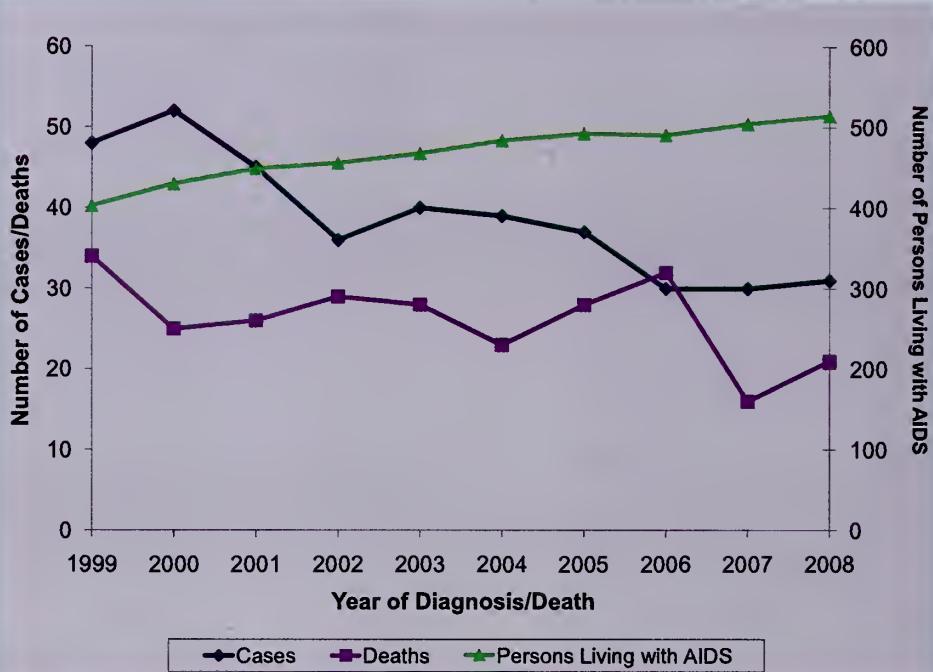


11

HIV/AIDS among Women

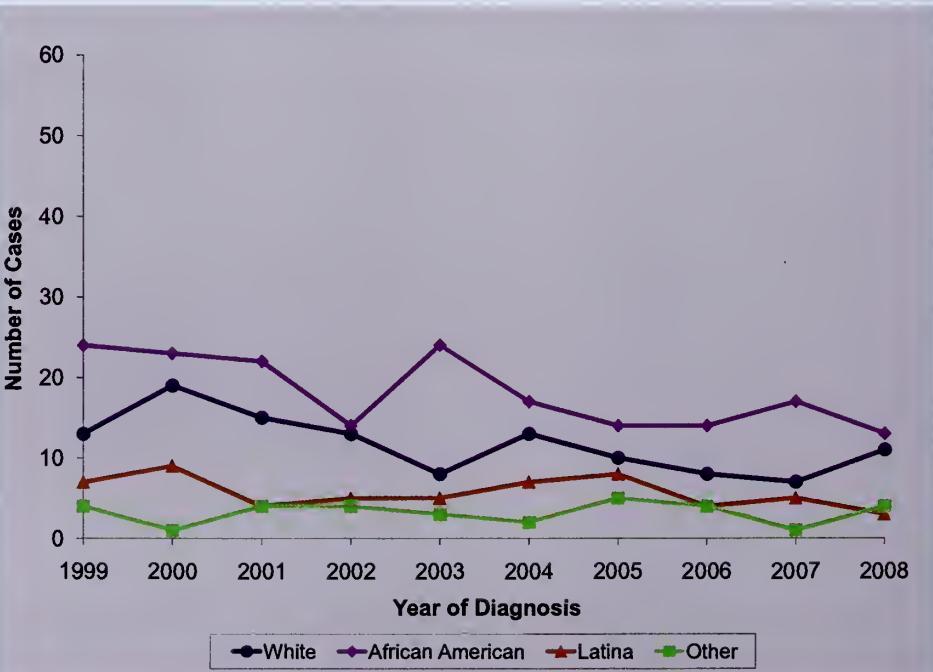
AIDS case numbers among women in San Francisco declined from 1999 to 2006 and stayed level from 2006 to 2008 (Figure 11.1). The number of deaths remained fairly stable from 1999 to 2006. As of December 31, 2008 there were 514 women living with AIDS.

Figure 11.1 AIDS cases, deaths, and prevalence among women, 1999-2008, San Francisco



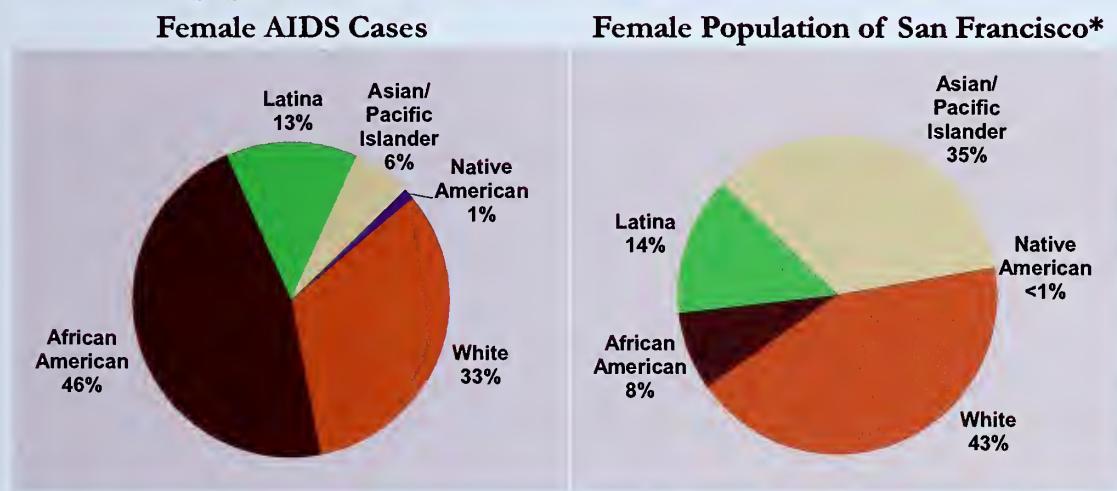
During 1999 to 2008, African American women represented the highest number of newly diagnosed female AIDS cases, and white women represented the second highest number of female AIDS cases (Figure 11.2).

Figure 11.2 Female AIDS cases by race/ethnicity, 1999-2008, San Francisco



Compared to the female population of San Francisco, African Americans are disproportionately affected among women diagnosed with AIDS (Figure 11.3). Although African American women represent 8% of the female population, they account for 46% of the female AIDS cases in San Francisco.

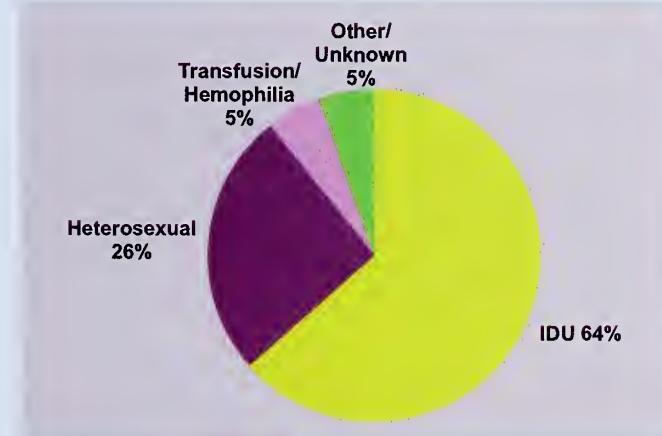
Figure 11.3 Female AIDS cases diagnosed through December 2008 and female population by race/ethnicity, San Francisco



* United States 2000 Census data.

Almost two-thirds of all female AIDS cases diagnosed in San Francisco acquired HIV infection through injection drug use (Figure 11.4). More than a quarter of all female AIDS cases in San Francisco acquired HIV infection through heterosexual contact.

Figure 11.4 Female AIDS cases diagnosed through December 2008 by exposure category, San Francisco



12 HIV/AIDS among Adolescents and Young Adults

Table 12.1 shows living HIV/AIDS cases diagnosed in San Francisco that were adolescents (age 13-19) and young adults (age 20-24) as of December 31, 2008. There were 25 adolescents and 140 young adults. Among living adolescent HIV/AIDS cases, the majority were infected with HIV perinatally. Latino and African Americans accounted for the highest percentage of adolescent cases. Among living young adult HIV/AIDS cases, the majority were MSM, and there were similar proportions of whites and Latinos.

Table 12.1 Living adolescent and young adult HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2008, San Francisco

	13-19 Years Old (N=25)	20-24 Years Old (N=140)
Exposure Category		
MSM	28%	67%
IDU	0%	3%
MSM IDU	4%	11%
Heterosexual	4%	6%
Perinatal	56%	4%
Other/Unknown	8%	9%
Gender		
Male	52%	83%
Female	48%	9%
Transgender	0%	8%
Race/Ethnicity		
White	16%	30%
African American	32%	26%
Latino	36%	31%
Asian/Pacific Islander	8%	6%
Other/Unknown	8%	5%

Table 12.2 compares AIDS cases diagnosed among San Francisco adolescents and young adults with adolescents and young adults diagnosed nationally. From 2004 to 2007, the proportion of national adolescent and young adult AIDS cases was higher than San Francisco adolescent and young adult AIDS cases.

Table 12.2 AIDS cases diagnosed among adolescents and young adults, 2004-2007, San Francisco and the United States

	Year of Diagnosis							
	2004		2005		2006		2007	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
San Francisco AIDS Cases								
Age 13-24 years at diagnosis	12	(3)	12	(3)	13	(3)	16	(4)
Total	478	(100)	474	(100)	431	(100)	432	(100)
U.S. AIDS Cases*								
Age 13-24 years at diagnosis	2,039	(5)	2,148	(6)	2,066	(6)	2,462	(7)
Total	38,695	(100)	37,256	(100)	36,791	(100)	37,041	(100)

* Based on estimated numbers in CDC HIV/AIDS Surveillance Report, 2007

13 HIV/AIDS among Children

HIV/AIDS surveillance data

As of December 31, 2008, a cumulative total of 38 pediatric AIDS cases (less than 13 years old and resided in San Francisco at time of diagnosis) had been reported. There were 14 pediatric HIV non-AIDS cases reported between 2002 and 2008. Of these pediatric HIV/AIDS cases, 28 were known to be alive as of December 2008, with many surviving beyond childhood. The majority of living pediatric HIV/AIDS cases acquired infection from a high-risk or AIDS-diagnosed mother (Table 13.1). Sixty-four percent are female and 93% are children of color.

Table 13.1 Living pediatric HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2008, San Francisco

		N= 28
Exposure Category		
Perinatal		89%
Other/Unidentified		11%
Gender		
Male		36%
Female		64%
Race/Ethnicity		
White		7%
African American		29%
Latino		36%
Asian/Pacific Islander		14%
Other/Multirace		14%

Perinatal HIV data

Data on children with HIV in San Francisco are gathered through the Pediatric Spectrum of Disease (PSD) project. The PSD project was established in 1989 by the Centers for Disease Control and Prevention and collects data from eight areas throughout the United States. In Northern California, hospital surveillance for children under 13 years old infected with HIV or infants born to infected mothers has occurred at eight pediatric hospitals (including University of California at San Francisco and San Francisco General Hospital). Records from HIV-positive pediatric patients cared for through the California Children's Services program, a state agency providing funding and case management for HIV-positive children, are also included in the PSD project. Data presented here include infants who were San Francisco residents and born to mothers documented to have HIV before delivery without a history of blood or blood product transfusion before 1985.

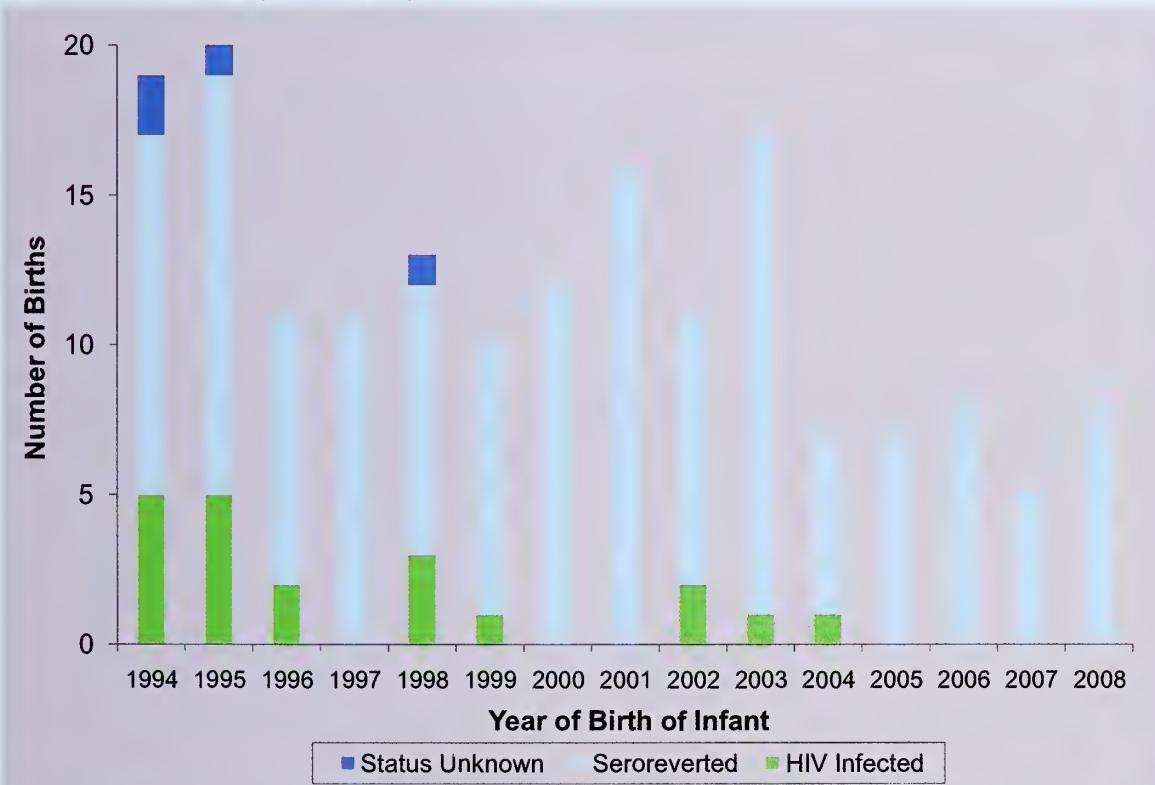
Through December 31, 2008, 332 infants were born to HIV-infected mothers who were residents of San Francisco (Table 13.2). Sixty-three (19%) of these infants were confirmed to be HIV-infected, 259 (78%) seroreverted (were determined to be uninfected after maternal antibodies disappeared), and 10 (3%) were of unknown serostatus. Forty-nine percent of perinatally exposed infants were African American, while whites and Latinos each accounted for 20% and 19% of these infants respectively.

Table 13.2 Infants born to HIV-infected mothers by infant HIV status and race/ethnicity, December 2008, San Francisco

	N (%)
Total	332
Infant HIV Status	
HIV-infected	63 (19)
Seroreverted (HIV-negative)	259 (78)
Unknown	10 (3)
Race/Ethnicity	
White	66 (20)
African American	162 (49)
Latino	64 (19)
Asian/Pacific Islander	24 (7)
Other/Unknown	16 (5)

The number of perinatally exposed infants who were confirmed as HIV-infected has remained low since 1996 (Figure 13.1). Declines in perinatal transmission of HIV are due to the improved therapies for mothers throughout pregnancy, at delivery, and for infants to prevent perinatal transmission. In 2008, eight infants born to HIV-infected mothers have been reported so far; all have seroreverted (i.e., were uninfected).

Figure 13.1 Infants born to HIV-infected mothers by year of birth and infant HIV status, 1994-2008, San Francisco



14 HIV/AIDS among Transgender Persons

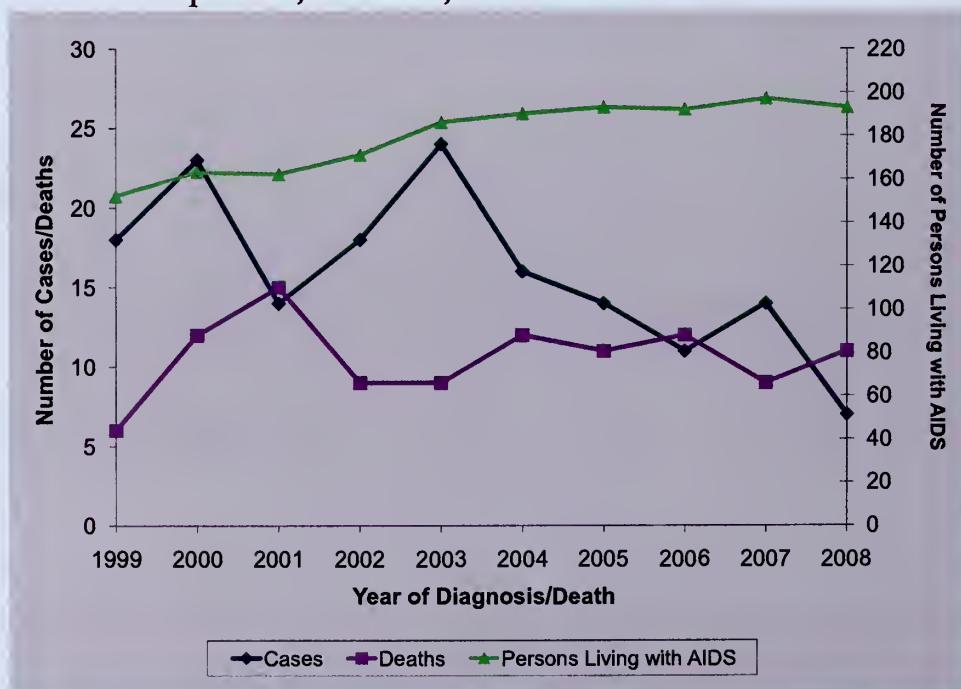
Transgender status is determined through review of information in medical records. Information on transgender status has been collected since 1996. During 2002-2008, there were a total of 150 HIV non-AIDS and AIDS transgender cases diagnosed in San Francisco (Table 14.1). Compared to all HIV/AIDS cases diagnosed in the same time period, transgender HIV/AIDS cases were more likely to be non-white, injection drug users, and younger.

Table 14.1 Characteristics of transgender* HIV/AIDS cases compared to all HIV/AIDS cases diagnosed in 2002-2008, San Francisco

	Transgender HIV/AIDS Cases Diagnosed 2002-2008 (N=150)	HIV/AIDS Cases Diagnosed 2002-2008 (N=5,259)
Race/Ethnicity		
White	23%	55%
African American	33%	16%
Latino	29%	19%
Asian/Pacific Islander	11%	6%
Other/Unknown	4%	4%
Injection Drug Use		
Yes	39%	22%
No	61%	78%
Age at Diagnosis (Years)		
13 - 29	34%	21%
30 - 39	33%	39%
40 - 49	25%	29%
50+	8%	12%

* See Technical Notes "Transgender Status."

Figure 14.1 AIDS cases, deaths, and prevalence among transgender persons, 1999-2008, San Francisco



15 HIV/AIDS among Homeless Persons

A case is classified as homeless if, at the time of HIV or AIDS diagnosis, the medical record states that the patient is homeless or the patient's address is one of the following: (1) a known homeless shelter, (2) a health care clinic, or (3) a free postal address not connected to a residence ('general delivery'). Cases with missing information on residence are not classified as homeless.

Figure 15.1 shows a decline in homeless AIDS cases diagnosed between 2000 and 2005. Since 1999, the proportion of homeless cases among all AIDS cases diagnosed per year ranged between 8% and 14%. For 2008, 12% of AIDS cases were homeless at the time of diagnosis.

Compared to all HIV/AIDS cases diagnosed from 2002 to 2008, persons who were homeless at their HIV/AIDS diagnosis (diagnosed 2002-2008) were more likely to be women, African American, injection drug users, and younger. (Table 15.1).

Figure 15.1 Number and percent of homeless AIDS cases by year of diagnosis, 1999-2008, San Francisco

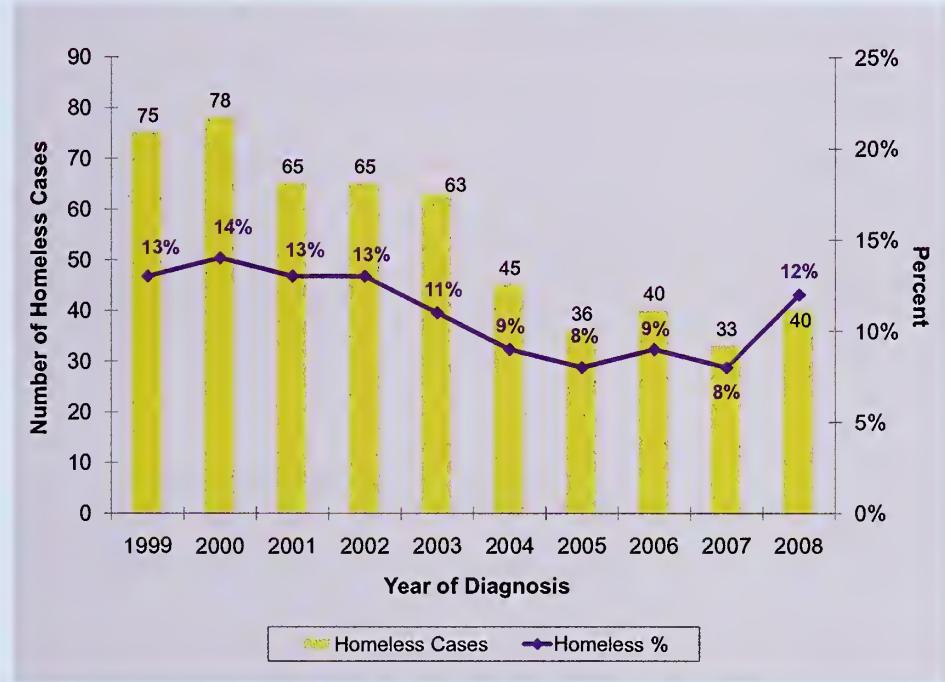


Table 15.1 Characteristics of homeless HIV/AIDS cases compared to all HIV/AIDS cases diagnosed in 2002-2008, San Francisco

	Homeless AIDS 2002-2008 (N=322)	AIDS Cases 2002-2008 (N=3,192)	Homeless HIV non-AIDS Cases 2002-2008 (N=253)	HIV non- AIDS Cases 2002-2008 (N=3,368)
Gender				
Male	84%	92%	86%	93%
Female	16%	8%	14%	7%
Race/Ethnicity				
White	46%	56%	45%	56%
African American	34%	18%	30%	15%
Latino	14%	18%	14%	17%
Other/Unknown	6%	8%	10%	11%
Exposure Category				
MSM	25%	64%	36%	68%
IDU	37%	12%	29%	8%
MSM IDU	29%	17%	23%	12%
Heterosexual	6%	4%	4%	3%
Other/Unidentified	2%	3%	10%	9%
Age at Diagnosis (years)				
0 - 19	1%	<1%	2%	2%
20 - 29	12%	9%	30%	22%
30 - 39	30%	33%	29%	41%
40 - 49	42%	37%	30%	26%
50+	16%	20%	9%	9%

The SFDPH provides permanent, supportive housing services to homeless persons who have the most severe chronic medical and/or psychiatric needs through the Direct Access to Housing (DAH) program. Support services include on-site medical care, case management, and access to medical services at the Housing and Urban Health clinic, located near the residences. The monthly cost per DAH resident is approximately \$1000.

Persons with AIDS who were homeless at time of diagnosis were identified from the AIDS case registry and computer matched with the DAH database to determine whether they obtained DAH housing. Seventy AIDS cases matched with the DAH database and had move-in dates that were later than the AIDS diagnosis date. Homeless persons with AIDS who received supportive housing were similar to those who did not enter DAH except that they tended to be older (Table 15.2).

We compared the mortality of those who were placed into DAH residences to those who were not. There were two deaths among the 70 homeless persons who received DAH housing compared with 219 deaths out of 606 who were not housed in DAH residences. In a separate multivariate analysis that takes into account other factors affecting mortality, entry into the DAH reduced mortality by 80%.

Supportive housing is likely to have reduced mortality among homeless persons with AIDS by making medical care readily available, providing residents with a place to store their AIDS medications, and helping them adhere to their treatment regimen because housing provides a structure that contributes to a steady routine.

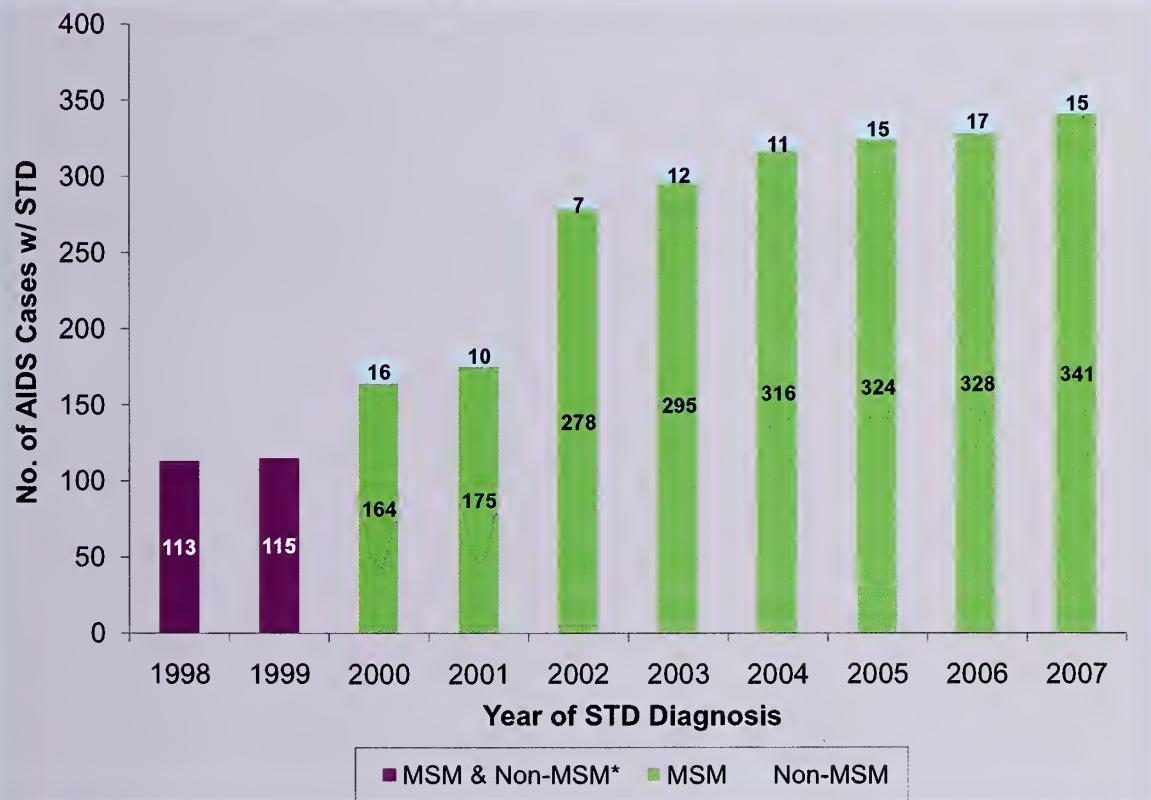
Table 15.2 Characteristics of homeless persons with AIDS who did and did not receive housing through the Direct Access to Housing program, 1996-2006, San Francisco

	Received Housing	
	Yes	No
Total Number	70	606
Gender		
Male	69%	78%
Female	23%	14%
Transgender	9%	8%
Age at Diagnosis (years)		
13-29	11%	14%
30-39	31%	40%
40-49	36%	35%
50+	21%	11%
Race/Ethnicity		
White	39%	41%
African American	40%	39%
Latino	14%	16%
Other	7%	4%
Exposure Category		
MSM	27%	20%
IDU	44%	40%
MSM IDU	24%	34%
Heterosexual/Other	4%	6%
Insurance Status		
Public	37%	34%
Private	4%	1%
None	57%	63%
Unknown	1%	2%
Initial AIDS Diagnosis		
Low CD4 count	79%	79%
Opportunistic illness	21%	21%
CD4 Count at Diagnosis (mean cells/μL)	176	172
Ever Received Antiretroviral Therapies		
Yes	80%	71%
No	20%	29%
Ever Received Prophylaxis against Pneumocystis Jirovecii Pneumonia		
Yes	67%	65%
No	33%	35%
Ever Received Prophylaxis against Mycobacterium Avium Complex		
Yes	27%	27%
No	73%	73%

16 Sexually Transmitted Diseases among Persons with HIV/AIDS

The occurrence of sexually transmitted disease (STD) diagnoses among persons living with HIV/AIDS is an important marker for sexual risk behavior. Diagnosis of STDs occurring among persons with HIV/AIDS was determined through a computerized match of the HIV/AIDS and STD case registries through 2007. The STD registry included persons reported with gonorrhea, chlamydia, non-gonococcal urethritis, or infectious syphilis. Cases of STDs among persons with AIDS have steadily risen since 1998 with a pronounced increase in 2002 (Figure 16.1). This jump in STDs among persons with AIDS could be expected due to steep increases in male rectal gonorrhea (see Figure 8.6) and syphilis (see Figure 8.7), particularly among MSM, reported in 2002. Starting in 2007, HIV non-AIDS cases were included in the match to identify STD diagnosis among persons with HIV infection who had not developed AIDS. In 2007, STD diagnoses occurred among 453 MSM HIV cases and 16 non-MSM HIV cases. All STDs occurred after the HIV/AIDS diagnosis, indicating unprotected sex among persons with known HIV infection.

Figure 16.1 Number of AIDS cases diagnosed with an STD by year of STD diagnosis, 1998-2007, San Francisco



* Prior to 2000, data for MSM and non-MSM was not separated.

17 Access to Care among Persons with HIV/AIDS

Estimate of unmet need for HIV medical care

An analysis was conducted to estimate unmet need for medical care for persons living with AIDS (PLWA) and HIV non-AIDS (PLWH) in San Francisco. Unmet need for care was defined as not having had a laboratory test or receipt of antiretroviral therapy during the 12-month period from July 1, 2006 through June 30, 2007. Care information was obtained from laboratory reporting of viral load and CD4 test results, medical record chart reviews, and data from Medi-Cal, the AIDS Drug Assistance Program (ADAP), the AIDS Regional Information and Evaluation System (ARIES), and Kaiser Permanente Northern California. The unmet need estimates included both San Francisco residents and non-residents diagnosed with HIV/AIDS in San Francisco, and did not include undiagnosed or unreported cases.

We estimated that there were 10,254 PLWA and 9,237 PLWH in San Francisco during this time period. A total of 825 (8%) PLWA and 3,286 (36%) PLWH did not receive medical care (Table 17.1). Unmet need was higher among African Americans, those aged less than 40 years old, IDUs and heterosexuals.

Table 17.1 Unmet need by demographic and risk characteristics among persons living with HIV/AIDS, July 2006-June 2007, San Francisco

	Persons with AIDS N=10,254		Persons with HIV/non-AIDS N=9,237		All HIV/AIDS N=19,491	
	with unmet need Number	%	with unmet need Number	%	with unmet need Number	%
Total	825	8%	3,286	36%	4,111	21%
Gender						
Male	782	8%	3,017	35%	3,799	21%
Female	43	7%	269	37%	312	23%
Race/Ethnicity						
White	399	6%	1,937	34%	2,336	19%
African American	190	13%	547	40%	737	26%
Latino	159	10%	465	35%	624	21%
Asian/Pacific Islander	52	11%	174	37%	226	24%
Other	25	27%	163	43%	188	40%
Age in Years (as of June 2007)*						
20 - 29	20	10%	373	51%	393	42%
30 - 39	163	12%	956	41%	1,119	30%
40 - 49	148	3%	1,238	34%	1,386	17%
50 - 59	372	12%	557	30%	929	18%
60+	99	9%	131	23%	230	14%
Exposure Category						
MSM	581	8%	2,172	32%	2,753	20%
IDU	76	9%	381	61%	457	30%
MSM IDU	96	7%	510	51%	606	25%
Heterosexual	31	10%	143	53%	174	31%
Other/Unidentified	41	17%	80	12%	121	14%

* The age category 0-19 years was omitted due to the small sample size.

Assessing access to medical care using CD4 tests as a marker for care

Despite widespread efforts to promote HIV testing, prevention and care, a significant percentage of HIV infected individuals are not receiving or accessing care early in their infection. We assessed receipt of medical care after HIV diagnosis using initial CD4 test as a marker for entry into medical care. The majority (84%) of persons diagnosed with HIV during 2005-2007 received medical care within 12 months of their HIV diagnosis (Table 17.2). The median value of the initial CD4 counts within 12 months of diagnosis was 423 cells/ μ L.

Certain subgroups were less likely to access care within 12 months after diagnosis than others, including persons with HIV non-AIDS, African Americans, Latinos, persons reported without a risk, and those between 13 and 29 years of age. Lower initial CD4 count may indicate diagnosis late in the course of HIV disease or delayed entry into care. People diagnosed with AIDS, non whites, heterosexuals, and persons over 50 years of age had a lower initial CD4 count.

Table 17.2 Percent of HIV/AIDS cases diagnosed between 2005 and 2007 receiving at least one CD4 test within 12 months of HIV diagnosis and the median of initial CD4 counts, San Francisco

	Number [§]	Percent received at least one CD4 test within 12 months following HIV diagnosis	Median of initial CD4 counts [¶] (cells/ μ L)
Total	1,884	84%	423
HIV Status			
HIV infection (not AIDS)	1,283	78%	522
Concurrent HIV and AIDS diagnosis [‡]	288	99%	107
AIDS diagnosed \geq 1 months after HIV diagnosis	313	93%	292
Gender			
Male	1,741	84%	418
Female	143	85%	499
Race/Ethnicity			
White	1,042	88%	453
African American	285	81%	400
Latino	373	80%	349
Asian/Pacific Islander	113	84%	350
Other/Unknown	71	63%	473
Exposure Category			
MSM	1,293	85%	420
IDU	142	87%	417
MSM IDU	226	83%	453
Heterosexual	103	92%	286
Other/Unidentified	120	61%	502
Age at HIV Diagnosis (years)			
13 – 29	424	82%	456
30 – 39	687	85%	432
40 – 49	546	84%	401
50+	227	86%	363

§ Excludes 20 cases that were diagnosed at a facility outside of San Francisco and 34 cases who died within six months of diagnosis.

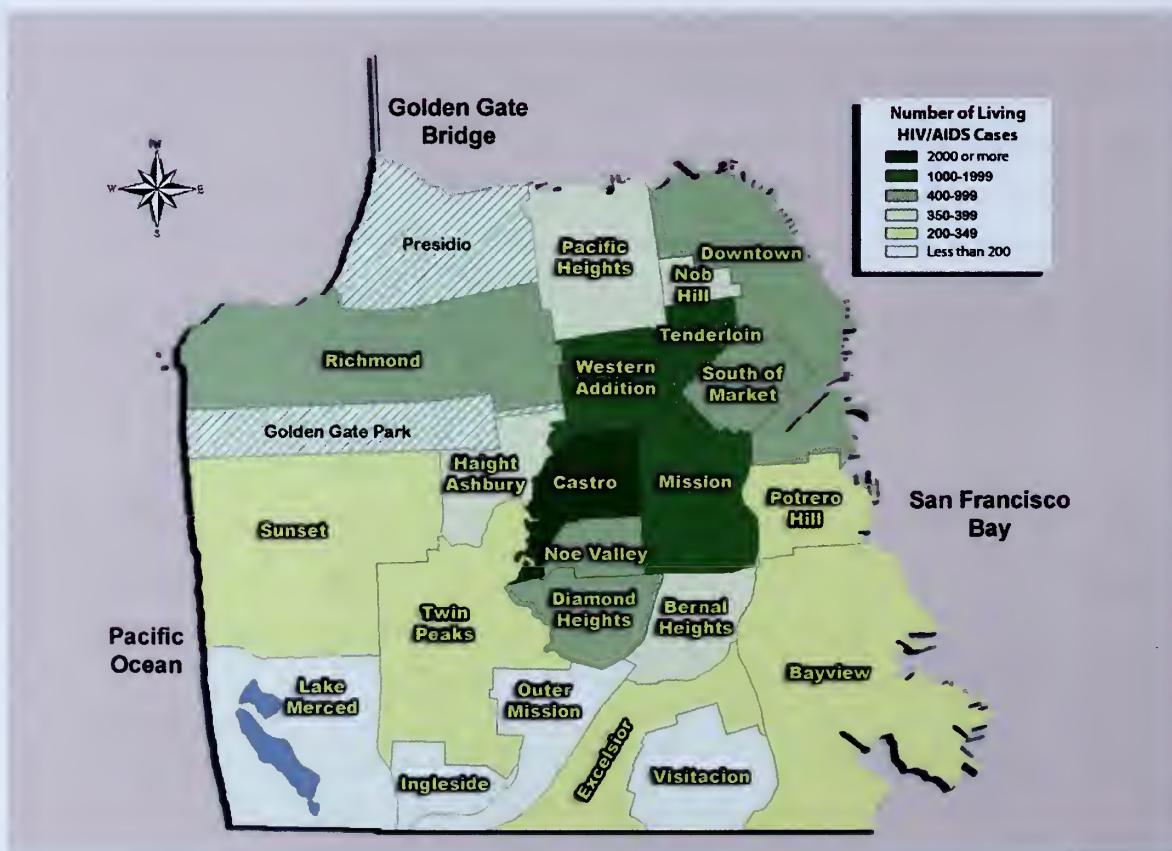
¶ Median of initial CD4 counts measured within 12 months following HIV diagnosis.

‡ AIDS was diagnosed in the same month and year of HIV infection diagnosis.

18 Geographic Distribution of HIV/AIDS

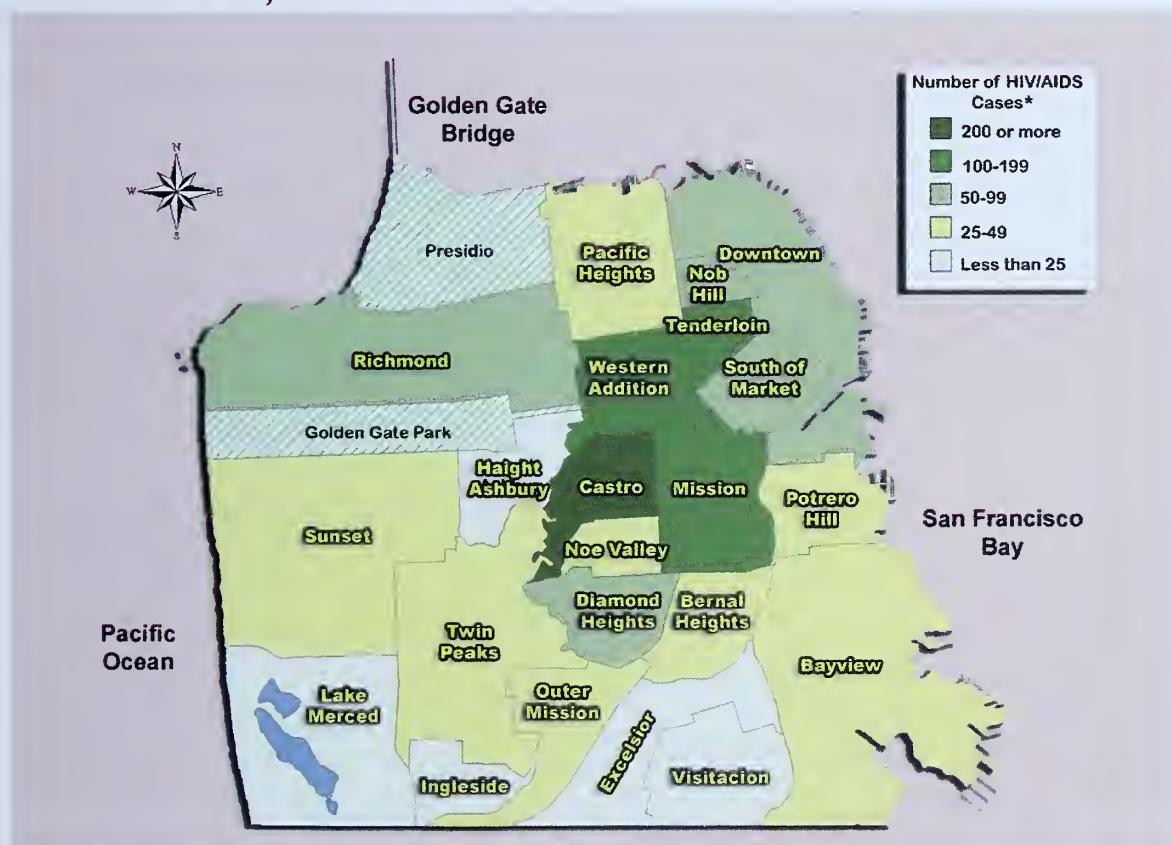
Map 18.1 illustrates the geographic distribution of HIV/AIDS cases in San Francisco who were alive as of December 31, 2008. The data includes persons who were San Francisco residents at the time of their HIV/AIDS diagnosis and not known to have died at the end of 2008. The neighborhoods with the highest number of living HIV/AIDS cases are the Castro, Mission, Western Addition, and Tenderloin.

Map 18.1 Spatial distribution of persons living with HIV/AIDS, December 2008, San Francisco



Geographical distributions of HIV/AIDS cases diagnosed from 2004 through 2008 were also examined and mapped by exposure category. Among MSM, the Castro remains the most heavily affected community, followed by the adjacent neighborhoods of Mission, Western Addition, and the Tenderloin (Map 18.2).

Map 18.2 Spatial distribution of HIV/AIDS cases diagnosed in 2004-2008 among MSM, San Francisco

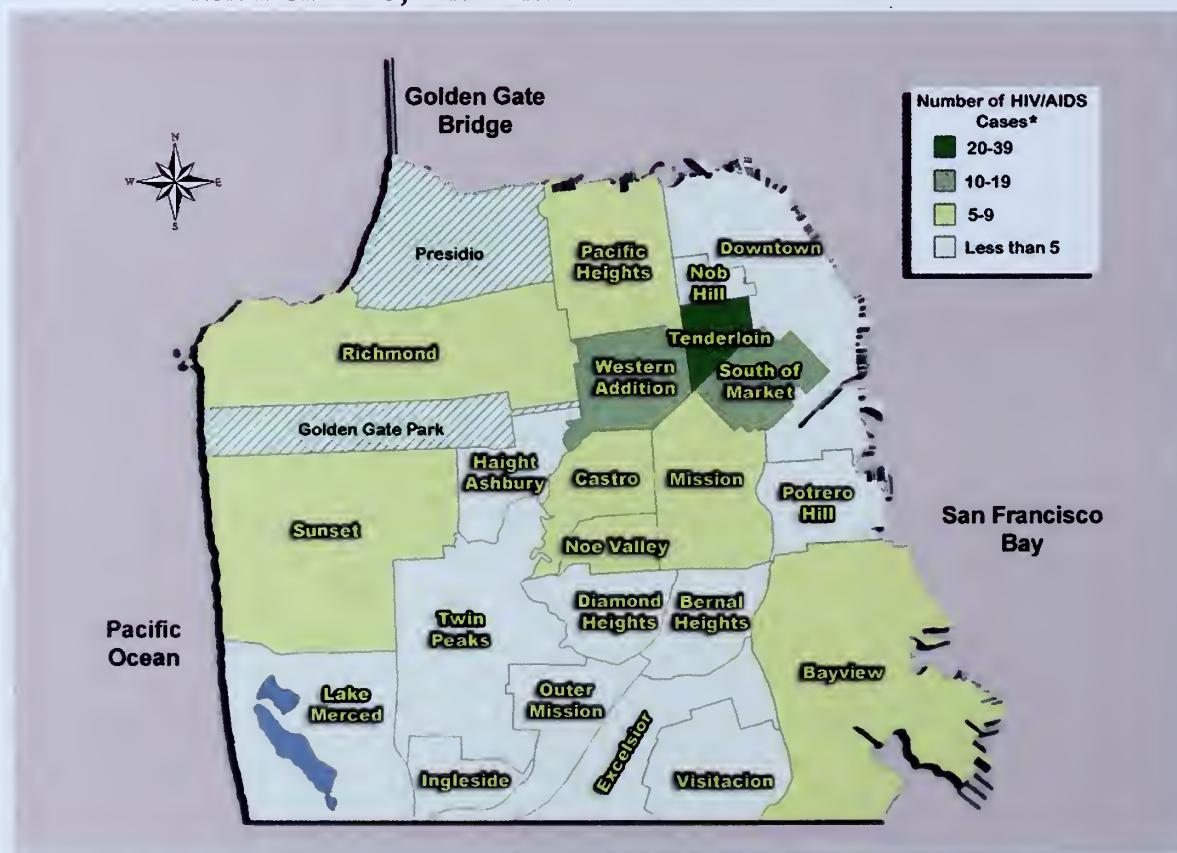


* MSM cases that were homeless at time of diagnosis (n=60) are not displayed in the map.

Geographic Distribution of HIV/AIDS

Map 18.3 shows HIV-infected injection drug users are mainly concentrated in the Tenderloin and two adjacent neighborhoods (Western Addition and South of Market). However, there are 59 homeless cases that accounted for the most diagnosed cases in 2004-2008 among non-MSM IDUs and exhibited an almost two-fold difference than the 30 Tenderloin cases.

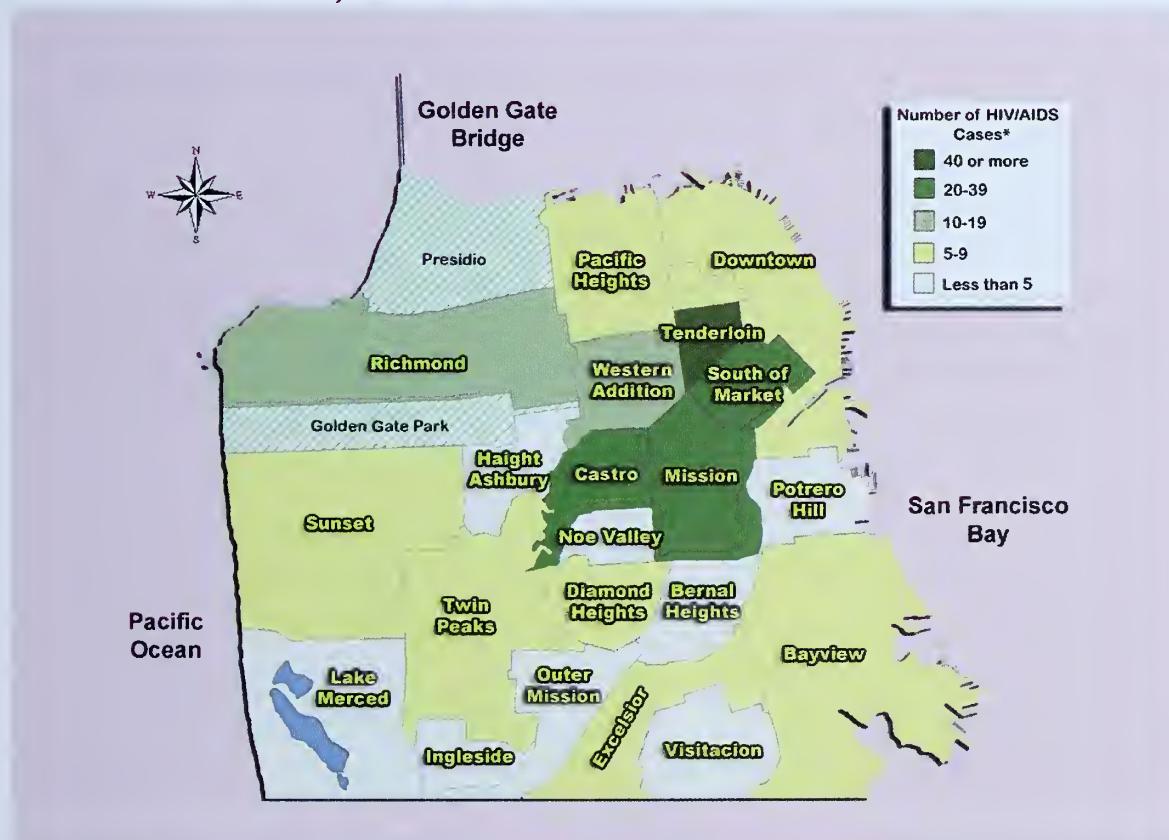
Map 18.3 Spatial distribution of HIV/AIDS cases diagnosed in 2004-2008 among non-MSM IDU, San Francisco



* Non-MSM IDU cases that were homeless at time of diagnosis ($n=59$) are not displayed in the map.

The Tenderloin and homeless population accounted for the most HIV/AIDS diagnosed cases exposed through MSM IDU, followed by the neighboring communities of the Castro, Mission, and South of Market (Map 18.4).

Map 18.4 Spatial distribution of HIV/AIDS cases diagnosed in 2004-2008 among MSM IDU, San Francisco

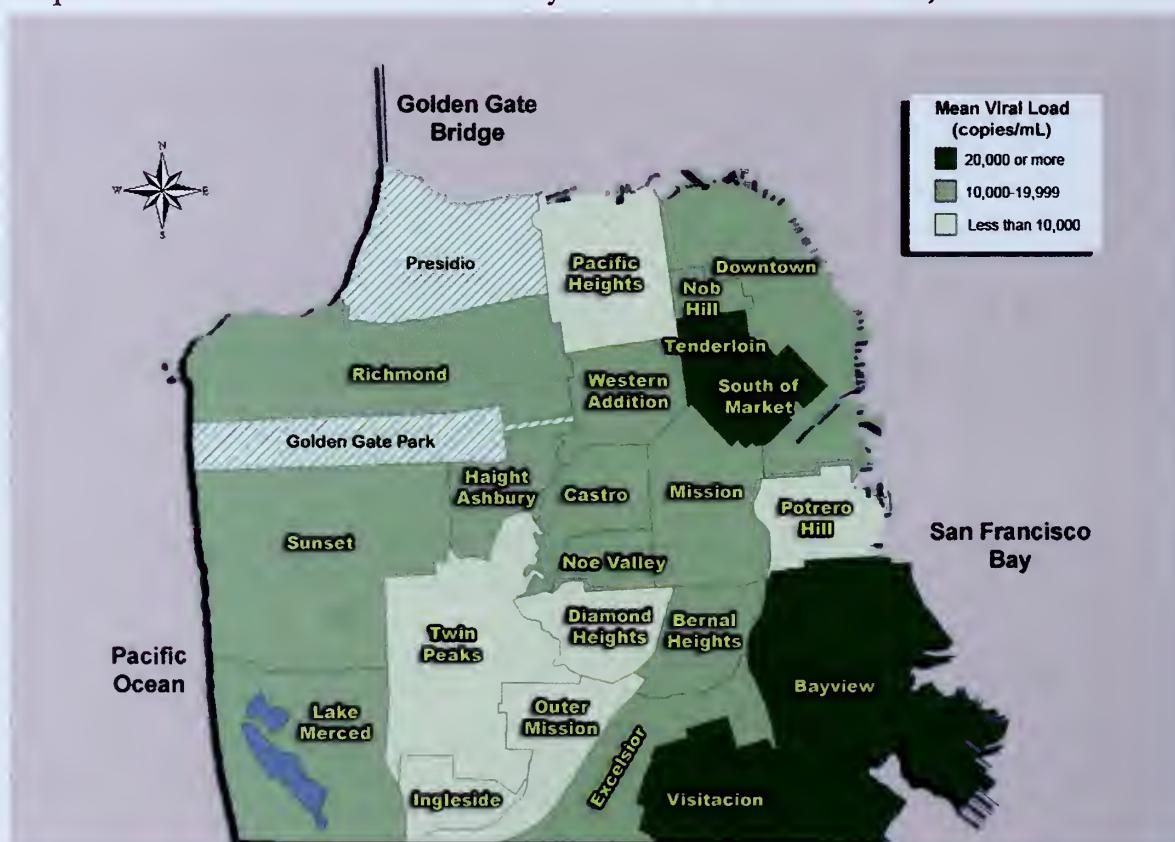


* MSM IDU cases that were homeless at time of diagnosis (n=49) are not displayed in the map.

Geographic Distribution of HIV/AIDS

Community viral load is a new population-based biomarker of community-level viral burden or overall level of infectiousness. Community viral load is defined as the mean value of the most recent viral load divided by the number of HIV-infected individuals in the community. This novel biologic indicator may measure both the success of HIV prevention efforts and HIV treatment effectiveness in particular communities. Map 18.5 demonstrates geographic disparities in the distribution of community viral load. The four neighborhoods with the highest mean community viral load, Visitacion Valley, Bayview, South of Market, and the Tenderloin, have the lowest median household incomes in San Francisco (2000 census data). Homeless individuals have the highest community viral load. Disparities in community viral load track along known disparities in socioeconomic status, uptake of antiretroviral therapy, and engagement in health care, and are consistent with our understanding of the HIV epidemic in San Francisco.

Map 18.5* Distribution of community viral loads from 2005-2007, San Francisco



* Das-Douglas M, Chu, P.L., Santos, D.M., McFarland, W., Colfax, G. Geographic, Demographic, and Health Status-related Disparities in Mean Community Viral Load in San Francisco. 16th International Conference on Retroviruses and Opportunistic Infections. Montreal, Canada. 2009. Abstract# L-199.

T Technical Notes

HIV/AIDS Surveillance Methods

San Francisco HIV/AIDS cases are reported primarily through active surveillance activities in which public health personnel review laboratory and pathology reports and medical records to identify cases and complete the case report forms. HIV/AIDS cases are also identified through passive reporting, review of death certificates, validation studies using secondary data sources such as hospital billing records or other disease registries, and reports from other health departments. The surveillance system is evaluated regularly for completeness, timeliness, and accuracy. AIDS case reporting has been found to be very complete (over 95%) while HIV case reporting is less complete due to an immature reporting system.

Publications of our HIV/AIDS data include only persons who were residents of San Francisco at the time they were diagnosed with HIV/AIDS. Our data also include San Francisco residents who were diagnosed in other jurisdictions. Persons diagnosed in San Francisco who resided in other jurisdictions at time of their HIV/AIDS diagnosis were excluded from the reports.

AIDS Incidence Rates

Annual race-specific rates are calculated as the number of cases diagnosed for a particular racial/ethnic group during each year divided by the population for that race/ethnicity, multiplied by 100,000. These rates are calculated separately for males and females. The annual populations are not available for transgender. Population denominators for the years 1999-2008 are obtained from the State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 1990-1999 and 2000-2050 data files, May 2004 (www.dof.ca.gov).

AIDS Survival

Survival was calculated as the time between the date of initial AIDS diagnosis and the date of death. This includes persons with at least one low CD4 (count<200 or percent<14%) and persons diagnosed with AIDS opportunistic illnesses. The follow-up information of cases was obtained through retrospective and prospective reviews of laboratory records and medical charts. Dates of death were obtained through review of local death certificates, reports from the State Office of AIDS, and matches with the National Death Index (NDI). The most recent NDI match included deaths that occurred through December 31, 2006. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 2006, whichever was more recent.

Causes of Death

Cause of death information on death certificates is coded using the International Classification of Diseases, 10th revision (ICD-10) for deaths occurring in 1999 or after, and the 9th revision (ICD-9) for deaths occurring prior to 1999. These codes are then processed and evaluated using a computerized system to determine the underlying and contributory causes of death (www.cdc.gov/nchs/about/major/dvs/im.htm). We obtained the ICD coded causes of death from the California multiple-cause-of-death computer tape for persons with AIDS who died prior to 1996. For AIDS deaths that occurred in 1996 and after, the cause of death information was obtained through matches with the National Death Index. Deaths attributable to HIV infection or AIDS are coded as 042-044 under ICD-9 and B20-B24 under ICD-10. In addition, the AIDS opportunistic illnesses, if listed on death certificates, are included in the category of 'HIV/AIDS' cause of death.

Grouping of Data Categories

Data regarding certain racial/ethnic or risk categories are grouped together when the number of persons with HIV/AIDS in that particular group is small and/or does not present significant trends. For example, "Other" in the Race/Ethnicity breakdown represents Asian/Pacific Islander, Native American and people of mixed race. Whenever possible, this report presents the expanded race/ethnicity categories rather than aggregating into the group "Other". The label "Other" in the Exposure Category breakdown may include transfusion recipients, hemophiliacs, heterosexuals, persons acquiring AIDS perinatally, or persons of unidentified risk.

Transgender Status

In September 1996, the San Francisco Department of Public Health began noting transgender status when this information is contained in the medical record. Transgender individuals are listed as either male-to-female or female-to-male. The majority of transgender HIV/AIDS cases are male-to-female. Please note that there are several limitations of our transgender data. We believe that our report likely underestimated the number of transgender persons affected by HIV/AIDS because data collected for HIV/AIDS reporting are derived from the medical record. Consequently, information that may be discussed with the health care provider but not recorded in the medical record is generally not available for the purposes of HIV/AIDS case reporting.

D

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Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2008, San Francisco 3

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Cases	3	26	99	274	557	859	1236	1629	1762	2162
Deaths	0	8	32	111	273	534	807	877	1038	1275
Persons Living with AIDS	3	21	88	251	535	860	1289	2041	2765	3652

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Cases	2048	2285	2327	2074	1788	1564	1083	805	694	581
Deaths	1364	1505	1641	1599	1592	1483	987	422	400	355
Persons Living with AIDS	4336	5116	5802	6277	6473	6554	6650	7033	7327	7553

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	555	511	495	561	478	474	431	432	321
Deaths	348	322	322	301	305	313	285	207	160
Persons Living with AIDS	7760	7949	8122	8382	8555	8716	8862	9087	9248

Figure 2.1 Number of AIDS cases by race/ethnicity, 1999-2008, San Francisco . . . 8

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	341	321	298	293	288	266	280	244	251	174
African American	105	114	101	88	107	76	82	79	75	59
Latino	103	88	70	76	122	107	83	75	71	52
Other	32	32	42	38	44	29	29	33	35	36

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Figure 2.2 Male annual AIDS incidence rates per 100,000 population by race/ethnicity, 1999-2008, San Francisco 9

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	178	161	150	147	145	130	140	121	123	82
African American	240	256	241	227	253	183	209	206	180	150
Latino	158	129	106	111	184	166	122	116	105	84
Other	22	23	29	25	32	20	18	22	25	22

Figure 2.3 Female annual AIDS incidence rates per 100,000 population by race/ethnicity, 1999-2008, San Francisco. 9

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	8	12	9	7	5	8	6	5	4	7
African American	75	72	69	44	78	56	47	47	57	44
Latina	14	17	8	10	10	14	16	8	10	6
Other	3	1	3	3	2	1	4	3	1	3

Figure 2.4 Number of male AIDS cases by exposure category, 1999-2008, San Francisco 10

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
MSM	356	329	305	300	352	307	291	280	272	197
IDU	48	53	42	43	58	26	40	26	30	14
MSM IDU	93	86	80	84	68	73	75	66	62	53
Other	18	12	25	15	19	17	17	18	24	19

Figure 2.5 Number of female AIDS cases by exposure category, 1999-2008, San Francisco 10

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
IDU	34	36	30	23	26	28	20	19	12	16
Heterosexual	12	14	10	9	13	7	14	8	16	13
Other	2	2	5	3	1	4	3	3	2	2

Figure 5.2 Leading causes of death among San Francisco male residents aged 25-54 years, 2001-2006..... 24

Year	2001	2002	2003	2004	2005	2006
Accident	113	94	95	78	92	111
Heart disease	91	104	107	75	82	83
HIV/AIDS	162	145	140	127	114	79
Non-AIDS cancer	109	90	89	84	79	76
Mental disorder	50	50	47	59	58	49
Suicide	43	42	57	44	41	48
Homicide	26	19	27	34	34	35
Liver disease	37	24	26	22	28	22
Cerebrovascular	12	15	15	18	17	9
COPD	13	10	9	4	10	6

Figure 5.3 Leading causes of death among San Francisco female residents aged 25-54 years, 2001-2006..... 25

Year	2001	2002	2003	2004	2005	2006
Non-AIDS cancer	69	69	78	81	80	72
Accident	37	22	27	30	31	40
Heart disease	27	31	30	23	28	22
HIV/AIDS	24	25	28	23	20	15
Mental disorder	7	12	16	8	23	13
Liver disease	9	13	4	7	5	12
Suicide	15	9	14	13	11	11
Cerebrovascular	2	11	13	5	14	10
Homicide	11	6	4	2	4	5
COPD	5	6	6	7	3	1

Data Tables

Figure 5.4 Leading causes of death rates per 100,000 population among San Francisco male residents aged 25-54 years by race/ethnicity, 2006 26

	White	African American	Latino
HIV/AIDS	42	63	25
Heart Disease	34	173	15
Non-AIDS Cancer	29	94	15
Accident	43	189	40

Figure 5.5 Leading causes of death rates per 100,000 population among San Francisco male residents by age group, 2006 26

	0-29	30-39	40-49	50-59	60+
HIV/AIDS	0	14	64	73	26
Heart Disease	4	5	44	172	1016
Accident	13	19	82	93	82
Non-AIDS Cancer	4	5	43	208	865
Mental Disorder	2	7	31	60	28
Suicide	12	10	27	37	28

Figure 7.1 Trends in insurance status among persons with AIDS by gender, 2003-2008, San Francisco 29

Male	2003	2004	2005	2006	2007	2008
Public	23%	24%	30%	26%	28%	40%
Private	43%	46%	43%	45%	45%	42%
None	33%	27%	24%	25%	23%	15%

Female	2003	2004	2005	2006	2007	2008
Public	55%	67%	51%	67%	73%	74%
Private	13%	8%	22%	17%	13%	3%
None	30%	23%	27%	17%	10%	19%

Transgender	2003	2004	2005	2006	2007	2008
Public	38%	63%	57%	82%	50%	43%
Private	4%	0%	0%	0%	7%	29%
None	54%	38%	43%	18%	43%	29%

Figure 8.1 AIDS cases, deaths, and prevalence among MSM, 1999-2008, San Francisco 31

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	467	436	399	401	444	396	380	357	347	257
Deaths	284	283	249	249	231	233	235	222	160	125
Persons Living with AIDS	6621	6774	6924	7076	7289	7452	7597	7732	7919	8051

Figure 8.2 AIDS cases among MSM by race/ethnicity, 1999-2008, San Francisco . . . 31

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	298	283	262	260	256	243	243	221	222	151
African American	58	55	49	42	52	41	48	45	32	34
Latino	84	71	56	68	104	90	68	64	62	43
Other	27	27	32	31	32	22	21	27	31	29

Figure 8.3 Percent of MSM reporting unprotected anal intercourse in the last six months by self-reported HIV status, the Stop AIDS Project, 1999-2008, San Francisco 32

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
HIV Positive	42%	46%	51%	45%	53%	54%	46%	57%	67%	52%
HIV Negative	32%	36%	37%	32%	37%	33%	37%	44%	43%	45%

Figure 8.4 Percent of MSM reporting unprotected anal intercourse in the last six months with at least one partner of unknown HIV status by self-reported HIV status, the Stop AIDS Project, 1999-2008, San Francisco 32

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
HIV Positive	25%	25%	31%	27%	28%	21%	9%	13%	18%	12%
HIV Negative	15%	17%	20%	16%	8%	4%	12%	10%	9%	12%

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	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Primary	3	3	13	45	95	105	118	69	74	59	111
Secondary	2	19	27	71	193	214	205	147	143	124	191
Early Latent	4	9	12	36	151	158	179	161	151	136	154

Figure 9.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 1999-2008, San Francisco 37

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	82	91	72	67	84	54	60	45	42	30
Deaths	64	52	60	58	60	60	63	50	39	26
Persons Living with AIDS	704	743	755	764	788	782	779	774	777	781

Figure 9.2 AIDS cases among non-MSM IDU by race/ethnicity, 1999-2008, San Francisco 37

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	37	33	29	25	29	17	29	18	17	16
African American	37	48	36	37	39	27	25	20	21	10
Latino	5	8	5	2	12	8	5	6	2	3
Other	3	2	2	3	4	2	1	1	2	1

Figure 10.1 AIDS cases, deaths, and prevalence among heterosexuals, 1999-2008, San Francisco 39

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	19	18	17	15	21	15	19	19	32	20
Deaths	4	4	8	9	6	5	6	6	6	4
Persons Living with AIDS	131	145	154	160	175	185	198	211	237	253

Figure 10.2 AIDS cases among heterosexuals by race/ethnicity, 1999-2008, San Francisco 39

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	3	3	2	4	3	4	3	1	2	3
African American	8	9	10	6	13	3	5	9	21	9
Latino	7	5	2	2	3	5	7	5	7	3
Other	1	1	3	3	2	3	4	4	2	5

Figure 11.1 AIDS cases, deaths, and prevalence among women, 1999-2008, San Francisco 42

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	48	52	45	36	40	39	37	30	30	31
Deaths	34	25	26	29	28	23	28	32	16	21
Persons Living with AIDS	402	429	448	455	467	483	492	490	504	514

Figure 11.2 Female AIDS cases by race/ethnicity, 1999-2008, San Francisco. 42

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	13	19	15	13	8	13	10	8	7	11
African American	24	23	22	14	24	17	14	14	17	13
Latina	7	9	4	5	5	7	8	4	5	3
Other	4	1	4	4	3	2	5	4	1	4

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Health Status	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
HIV Infected	5	5	2	0	3	1	0	0	2	1
Seroreverted	12	14	9	11	9	9	12	16	9	16
Status Unknown	2	1	0	0	1	0	0	0	0	0

Health Status	2004	2005	2006	2007	2008
HIV Infected	1	0	0	0	0
Seroreverted	6	7	8	5	8
Status Unknown	0	0	0	0	0

Data Tables

Figure 14.1 AIDS cases, deaths, and prevalence among transgender persons, 1999-2008, San Francisco 48

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cases	18	23	14	18	24	16	14	11	14	7
Deaths	6	12	15	9	9	12	11	12	9	11
Persons Living with AIDS	152	163	162	171	186	190	193	192	197	193





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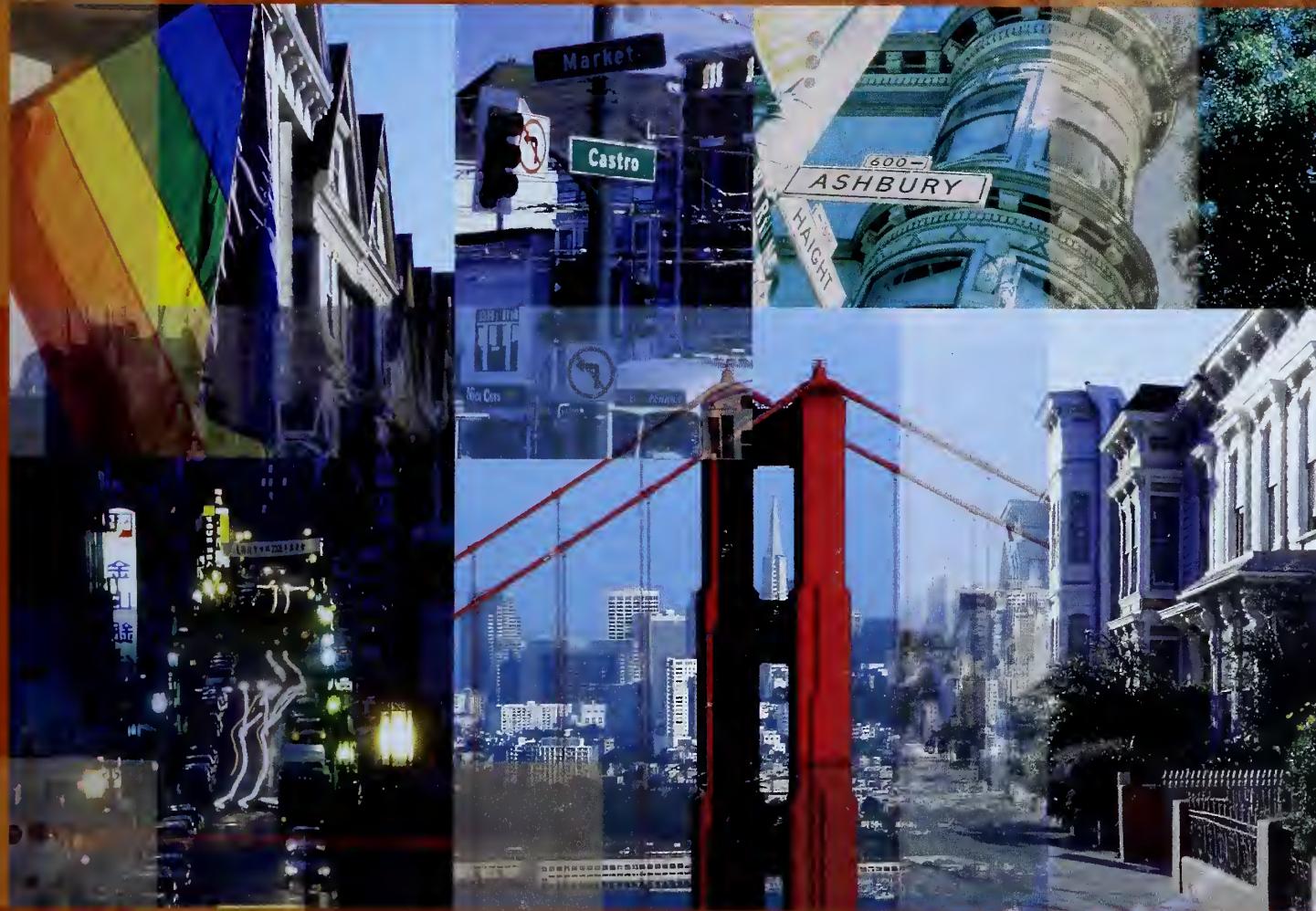


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Acknowledgments

This report was prepared by the HIV Epidemiology Section staff. We wish to thank the San Francisco Sexually Transmitted Disease Prevention and Control Services, the San Francisco STOP AIDS Project, and the Pediatric Spectrum of Disease Project for providing data in this report.

In addition, we wish to acknowledge the contribution of persons with HIV/AIDS, HIV/AIDS health care providers, community groups, researchers, and members of the community. Publication of this report would not have been possible without their cooperation, dedication, and hard work.

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Executive Summary

The widespread use of highly active antiretroviral therapy (HAART) beginning in 1996 in many industrialized countries has resulted in a large reduction in mortality rates among HIV infected persons. HIV/AIDS is now conceptualized as a chronic illness, to be managed in similar ways to diseases like diabetes, where a major goal of therapy is to prevent later complications and ensure quality of life. There has been a greater interest, then, in examining the role of non-AIDS-related illnesses among individuals with HIV/AIDS. Epidemiologic data have demonstrated that mortality rates due to non-AIDS-related causes of death have not decreased as dramatically as AIDS-related causes of death. In fact, the proportions of deaths due to many non-AIDS-related causes have increased since the introduction of HAART. Among these, non-AIDS-related cancers, liver-related illnesses, and heart disease have become more significant, especially as the population of persons with HIV/AIDS ages.

In San Francisco, our HIV/AIDS surveillance data have yielded similar trends in mortality. Although HIV/AIDS remains the leading cause of death among persons with HIV infection, the proportion of deaths in which HIV/AIDS was the underlying cause decreased from 74.4% in the period 1996-1999 to 61.9% in the period 2004-2007. Non-AIDS-related cancer and heart disease are emerging as important causes of death.

Advances in the treatment of HIV disease have had a dramatic effect on the trends in the age of death for infected persons. The median age at death, for example, has been increasing since the 1996-1999 period for HIV/AIDS and most non-AIDS-related causes of death. However, life expectancy for HIV-infected persons remains well below that of uninfected persons. Evidence of this is clear by examining the distribution of deaths by age group where persons in the 40-49 years carry the greatest mortality. Among persons aged 40 years and above, non-AIDS-related cancer and heart disease account for the greatest proportion of non-HIV/AIDS-related deaths.

Shifts in the causes of and the age at death among HIV-infected persons reflect more than just the survival benefit of HAART. Ongoing infection with HIV/AIDS may contribute to some non-AIDS-related illnesses through immunosuppression and inflammation. Emerging evidence suggests that HIV-infected persons age faster than uninfected persons and HIV/AIDS leads to the development of chronic age-related illness and death. Side effects of long-term treatment may contribute to the observed trends in causes of death.

Monitoring trends in mortality rates and the causes of death among HIV-infected persons provides important data that inform treatment policies and allow for the evaluation of the impact of such policies on mortality. San Francisco recently adopted recommendations to provide antiretroviral therapy for all HIV-infected persons regardless of their clinical stage of disease. The impact of these recommendations on mortality rates, causes, and age at death will be important outcomes to follow over the coming years.

1 Overview of HIV/AIDS in San Francisco

HIV/AIDS surveillance in San Francisco is conducted through various methods and evaluated on a regular basis (see Technical Notes, HIV/AIDS Surveillance Methods). There were a cumulative total of 28,409 San Francisco residents diagnosed with AIDS from the beginning of the epidemic to December 31, 2009 (Table 1.1). This comprises 18% of California AIDS cases and 3% of AIDS cases reported nationally. Compared to cases reported in California and the United States, AIDS cases in San Francisco are more likely to be male, white, and to occur among men who have sex with men (MSM), including MSM who also inject drugs intravenously (MSM IDU).

HIV/AIDS cases diagnosed in 2009 exhibit different distributions in demographic and exposure categories. Compared to cumulative San Francisco AIDS cases, there was a greater proportion of females, people of color, and people infected through heterosexual contact. Compared to HIV/AIDS cases diagnosed nationally in 2008, San Francisco's recently diagnosed HIV/AIDS cases were more likely to be male, white, and MSM.

Table 1.1 Characteristics of cumulative AIDS cases and newly diagnosed HIV/AIDS cases in San Francisco, California and the United States

	Cumulative AIDS Cases*			Newly Diagnosed HIV/AIDS Cases*	
	San Francisco ¹ (N = 28,409)	California ² (N = 155,208)	United States ³ (N = 1,045,457)	San Francisco ¹ , 2009 (N = 411)	United States ³ , 2008 (N = 34,188)
	Number	%	%	%	%
Gender					
Male	26,819	94%	90%	80%	90%
Female	1,191	4%	9%	20%	7%
Transgender [#]	399	1%	<1%	--	3%
Race/Ethnicity					
White	20,111	71%	55%	39%	50%
African American	3,586	13%	18%	42%	16%
Latino	3,459	12%	24%	17%	23%
Asian/Pacific Islander	890	3%	2%	<1%	8%
Native American	126	<1%	<1%	<1%	1%
Other/Unknown	237	1%	<1%	<1%	2%
Exposure Category					
MSM	21,068	74%	67%	44%	73%
IDU	2,166	8%	10%	22%	6%
MSM IDU	4,280	15%	10%	6%	11%
Heterosexual	451	2%	6%	14%	5%
Other/Unidentified	444	2%	7%	14%	6%

* Percentages may not add to 100% due to rounding.

1 San Francisco data are reported through February 26, 2010 for cases diagnosed through December 2009.

2 California data are reported through September 2009. California data on newly diagnosed HIV/AIDS cases are not available.

3 U.S. data are reported through December 2008 and may be found in the CDC HIV Surveillance Report, 2008; Vol. 20. U.S. data reflect unadjusted numbers for 37 states with confidential name-based HIV reporting.

Transgender data are not reported by the United States. See Technical Notes "Transgender Status."

Overview of HIV/AIDS in San Francisco

For San Francisco AIDS cases, the distribution of HIV exposure categories differs by race/ethnicity and gender. Among men, MSM account for the majority of male AIDS cases within all racial/ethnic groups (Table 1.2). In African American men, injection drug use among heterosexuals is the second leading exposure category, but for men of all other racial/ethnic groups, MSM IDU represents the second most frequent exposure category. Cumulatively, less than 2% of men with AIDS acquired HIV infection through heterosexual contact, transfusion of blood or blood products, or other exposure categories.

Among women with AIDS, the most frequent exposure category for whites, African Americans, Latinas, and Native Americans is injection drug use (IDU) followed by heterosexual contact. For Asian/Pacific Islander women, 49% acquired their infection through heterosexual contact, 25% through injection drug use, and 16% through transfusion of blood or blood products.

Compared to men and women with AIDS, male to female transgender AIDS cases were more likely to be in a transmission category involving injection drug use. Among transgender AIDS cases, 57% of whites, 69% of African Americans, 44% of Latinos and 31% Asian/Pacific Islander were IDU.

Table 1.2 Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2009, San Francisco

	White Number (%)	African American Number (%)	Latino Number (%)	Asian/Pacific Islander Number (%)	Native American Number (%)
Male					
MSM	16,037 (82)	1,517 (52)	2,483 (78)	662 (84)	53 (49)
IDU	511 (3)	672 (23)	172 (5)	24 (3)	8 (7)
MSM IDU	2,920 (15)	597 (20)	400 (13)	59 (7)	44 (40)
Heterosexual	34 (<1)	58 (2)	34 (1)	12 (2)	2 (2)
Transfusion/ Hemophilia	50 (<1)	17 (1)	23 (1)	12 (2)	0 (0)
Other/Unidentified	68 (<1)	59 (2)	56 (2)	23 (3)	2 (2)
Male Subtotal	19,620	2,920	3,168	792	109
Female					
IDU	250 (65)	383 (71)	81 (48)	16 (25)	12 (86)
Heterosexual	82 (21)	123 (23)	67 (39)	31 (49)	2 (14)
Transfusion/ Hemophilia	29 (8)	10 (2)	10 (6)	10 (16)	0 (0)
Other/Unidentified	21 (5)	26 (5)	12 (7)	6 (10)	0 (0)
Female Subtotal	382	542	170	63	14
Transgender (Male to Female Only*)					
IDU	62 (57)	86 (69)	53 (44)	11 (31)	#
Non IDU	47 (43)	38 (31)	68 (56)	24 (69)	#
Transgender Subtotal	109	124	121	35	#

* See Technical Notes “Transgender Status.”

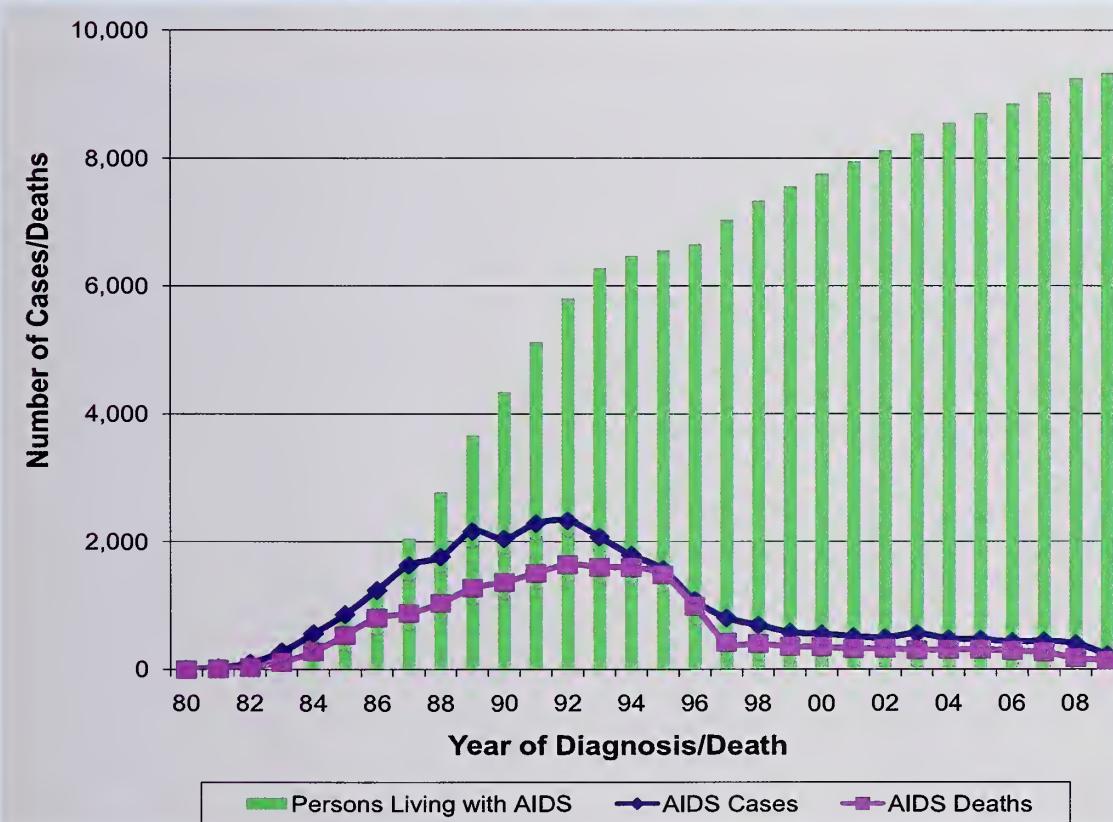
Data are not released due to potential small population size.

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The number of new AIDS cases diagnosed each year among San Francisco residents reached a peak of 2,327 cases in 1992 and has declined since then (Figure 1.1). Deaths among persons with AIDS reached a plateau between 1992 and 1995 and declined thereafter. The sharpest decline in AIDS deaths occurred between 1995 and 1997, reflecting the impact of combination antiretroviral therapies. Since 1999, slight declines have continued in both cases and deaths. Delays in reporting affect the number of cases and deaths for recent years. Therefore, the numbers of cases and deaths for 2008 and 2009 may be revised upward in future reports.

The number of San Franciscans living with AIDS has continued to rise every year since 1980. This is due to effective antiretroviral therapy and a lower number of AIDS deaths than new AIDS cases each year. There were 9,326 San Francisco residents living with AIDS by the end of 2009.

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2009, San Francisco

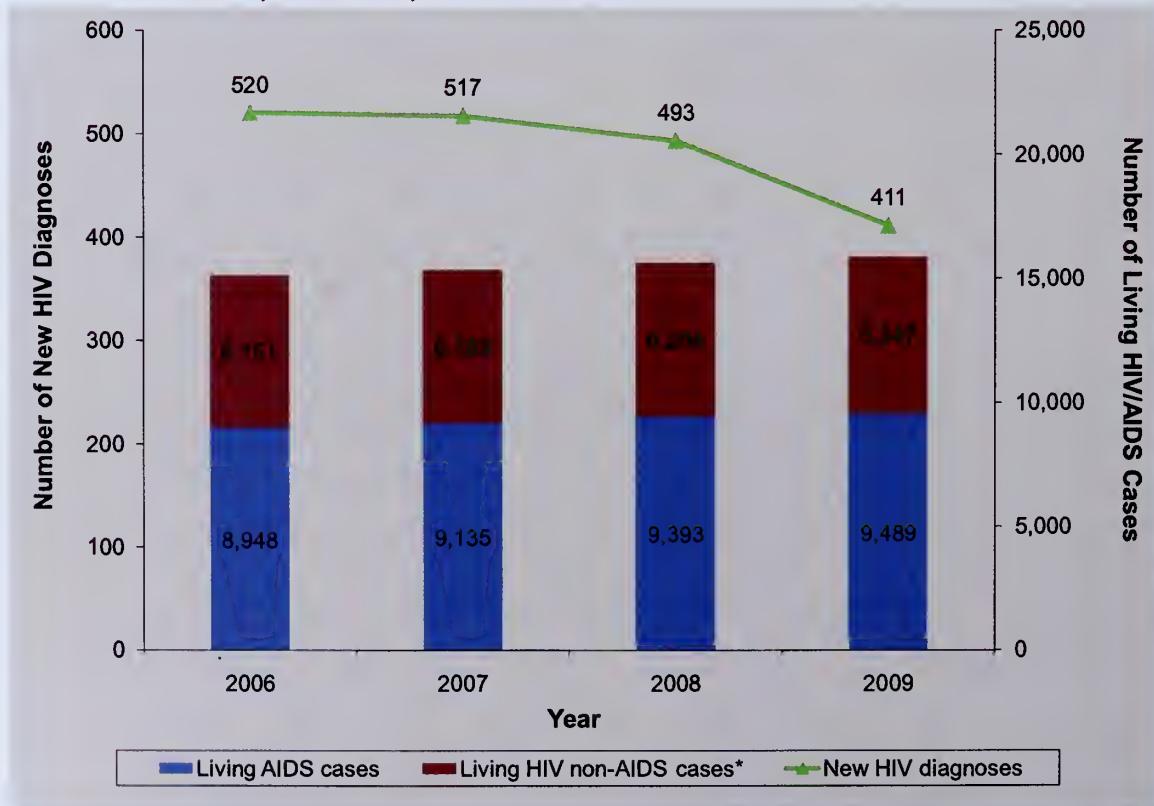


Overview of HIV/AIDS in San Francisco

Figure 1.2 illustrates the number of persons newly diagnosed with HIV infection (line) and number of persons living with HIV/AIDS between 2006 and 2009 (stacked bars). The date of HIV diagnosis for newly diagnosed cases was determined based on the earliest date of any of the following: a) HIV antibody test, b) viral load or CD4 test, c) initiation of antiretroviral therapy, or d) patient self-report of a positive HIV test. The number of new HIV diagnoses shown by year includes persons who were diagnosed in that year with HIV non-AIDS, concurrent HIV and AIDS diagnosis, or initially diagnosed with HIV non-AIDS and developed AIDS in subsequent year.

The number of new HIV diagnoses remained relatively stable between 2006 and 2008 and declined in 2009. The numbers are lower for cases diagnosed in recent years due to reporting delay. The number of living cases by year includes persons who were diagnosed with HIV/AIDS during or prior to the year shown and known to be alive by the end of that year. The number of persons living with HIV/AIDS continued to increase from 15,099 in 2006 to 15,836 in 2009. The increasing number of living cases is a reflection of both a steady addition of newly diagnosed cases over time coupled with a decline in deaths in each year. These data only include persons who have been diagnosed and reported to the health department. HIV-infected persons who are unaware of their infection and persons diagnosed with an anonymous HIV test are not included. Thus, these figures may underestimate the true prevalence.

Figure 1.2 Number of cases diagnosed with HIV infection and HIV/AIDS prevalence, 2006-2009, San Francisco



* Includes persons reported both by name and by a non-name code prior to 2006.

Table 1.3 shows the characteristics of persons diagnosed with HIV between 2006 and 2009. The majority were male, white, aged 25-49 years, and MSM. There was a slight increase in the proportion of persons of color. There were no children (<13 years) diagnosed with HIV during this time period.

Table 1.3 Characteristics of persons newly diagnosed with HIV between 2006 and 2009, San Francisco

	Year of HIV Initial Diagnosis*			
	2006	2007	2008	2009
Total Number	520	517	493	411
Gender				
Male	91%	88%	90%	90%
Female	7%	8%	8%	7%
Transgender	2%	4%	2%	3%
Race/Ethnicity				
White	58%	54%	50%	50%
African American	15%	15%	16%	16%
Latino	20%	19%	23%	23%
Asian/Pacific Islander	6%	9%	9%	8%
Native American	1%	0%	1%	1%
Other/Unknown	1%	3%	2%	2%
Age at HIV Diagnosis (years)				
0 – 12	0%	0%	0%	0%
13 – 24	11%	10%	10%	13%
25 – 49	74%	79%	80%	71%
50+	15%	11%	10%	16%
Exposure Category				
MSM	71%	67%	71%	73%
IDU	8%	8%	6%	6%
MSM IDU	12%	12%	9%	11%
Heterosexual	4%	7%	6%	5%
Other/Unidentified	6%	6%	7%	6%

* Data include persons with a diagnosis of HIV (not AIDS), an initial diagnosis of HIV (not AIDS) and later diagnosed with AIDS, and concurrent diagnosis of HIV and AIDS, reported to the SFDPH as of February 26, 2010. Percentages may not add to 100% due to rounding.

Overview of HIV/AIDS in San Francisco

Characteristics of living HIV/AIDS cases in San Francisco are different compared to statewide and nationwide cases (Table 1.4). Compared to California and U.S. living HIV/AIDS cases, San Francisco living HIV/AIDS cases are more likely to be male, white, and MSM. There is a larger proportion of persons living with HIV/AIDS in California and the U.S. that are female, African Americans and Latinos. Heterosexual contact and IDU (non-MSM) are also more common among California and U.S. cases than San Francisco cases.

Table 1.4 Characteristics of persons living with HIV/AIDS in San Francisco, California and the United States, December 2009

	San Francisco ¹		California ²		United States ³
	Living HIV Non-AIDS Case	Living HIV/AIDS Cases	Living HIV Non-AIDS Cases	Living HIV/AIDS Cases	Living HIV/AIDS Cases
Total Number	6,347	15,836	37,302	105,701	561,886
Gender					
Male	92%	92%	86%	87%	73%
Female	6%	6%	13%	12%	27%
Transgender	2%	2%	1%	1%	--
Race/Ethnicity					
White	63%	63%	48%	47%	33%
African American	13%	14%	19%	19%	48%
Latino	15%	16%	29%	30%	17%
Asian/Pacific Islander	5%	5%	4%	3%	<1%
Native American	1%	1%	<1%	<1%	<1%
Other/Unknown	3%	1%	1%	1%	<1%
Exposure Category					
MSM	73%	73%	67%	65%	38%
IDU	6%	7%	7%	9%	14%
MSM IDU	12%	13%	6%	8%	4%
Heterosexual	3%	3%	9%	9%	19%
Other/Unidentified	6%	4%	11%	9%	24%

1. San Francisco cases are reported through February 26, 2010 for cases diagnosed through December 31, 2009 and include both the name-based and code-based HIV cases.

2. California cases are reported through September 30, 2009 and include only the name-based HIV cases.

3. U.S. data reflect unadjusted living cases, as of December 2007 for 37 states with confidential name-based HIV reporting.

HIV Incidence Estimates

Using a statistical methodology developed by the Centers for Disease Control and Prevention, we estimated the number of incident or new HIV infections in San Francisco by year. Blood from standard HIV tests from newly diagnosed HIV cases is retested using a laboratory assay (called BED) that classifies individuals as having either a recently acquired HIV infection (within the past six months) or a longer-standing infection. Results from this test are used with a statistical adjustment for HIV testing patterns to calculate HIV incidence.

Applying this methodology in San Francisco in 2006, 2007 and 2008, we find that the number of new HIV infections is declining (Table 1.5). While this decline is encouraging and corresponds with a similar drop in number of new HIV diagnoses, the confidence intervals overlap from year to year indicating that the declines are not statistically significant.

Table 1.5 Estimated incident HIV infections in San Francisco, 2006-2008

Year of HIV Infection	HIV Incidence Estimates	
	Number of New Infections	95% Confidence Interval
2006	975	[801 - 1,082]
2007	792	[552 - 1,033]
2008	621	[462 - 782]

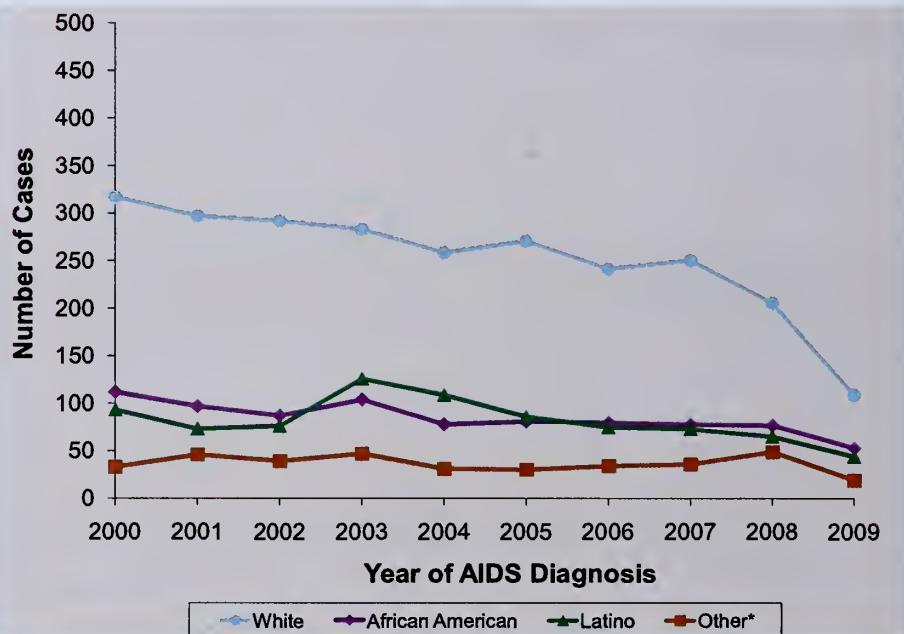
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Trends in HIV/AIDS Diagnosis

Race/ethnicity

In absolute numbers, AIDS cases in San Francisco have occurred predominantly among whites (Figure 2.1). The number of white AIDS cases has declined over the last 10 years. The number of African American AIDS cases also declined from 2000, but has been level between 2004 and 2007. The trend for Latino AIDS cases shows a period of slight increase until 2003 and a decline thereafter. AIDS case counts for recent years are subject to delays in reporting, particularly for 2009.

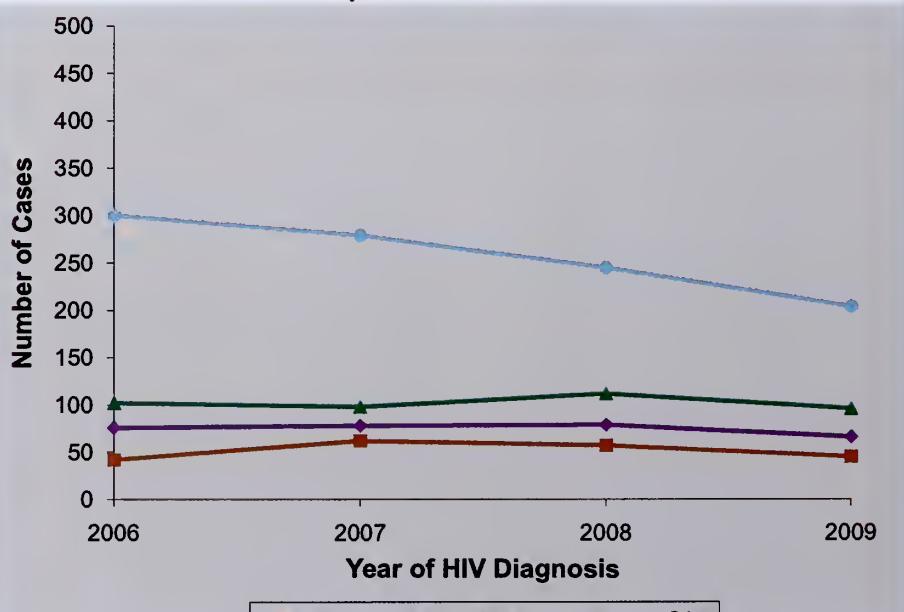
Figure 2.1 Number of AIDS cases by race/ethnicity, 2000-2009, San Francisco



* Cases in the "Other" race/ethnicity category include 74% Asian/Pacific Islanders and 9% Native Americans.

Trends by race/ethnicity category for cases diagnosed with HIV infection show that, from 2006 to 2009, whites accounted for the majority of diagnosed cases (Figure 2.2). The number of white HIV/AIDS cases declined in this time period, while the number of HIV/AIDS cases for other race/ethnicity groups remained level.

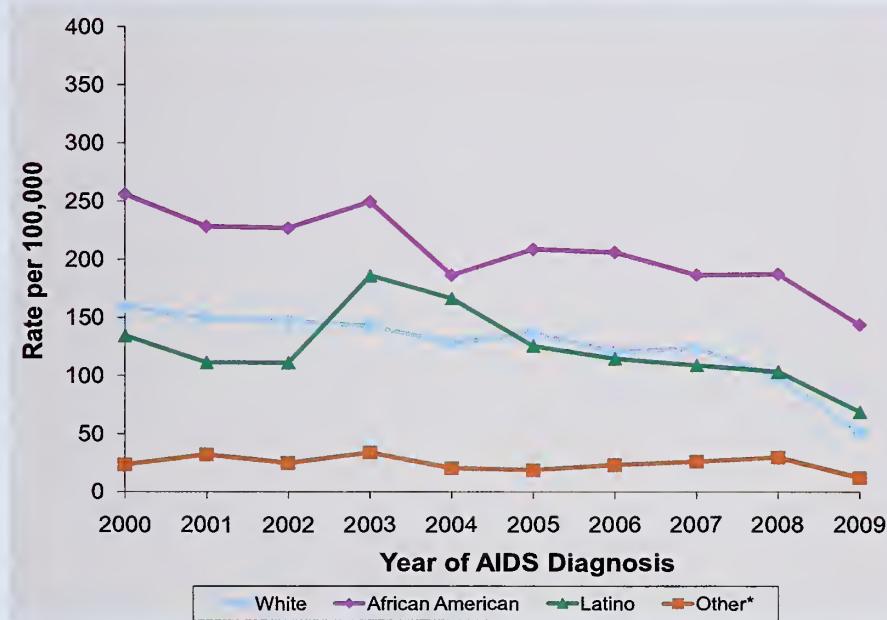
Figure 2.2 Number of cases diagnosed with HIV infection* by race/ethnicity, 2006-2009, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Since 2000, the AIDS incidence rates among African American men have been higher than for men of all other race/ethnicity groups (Figure 2.3). The AIDS incidence rates for white men and Latino men have been similar since 2005. In 2009, the incidence rate of AIDS per 100,000 population was 144 among African American men, 51 for white men, and 69 for Latino men. Delays in reporting result in under-estimation of rates for recent years, particularly for 2009.

Figure 2.3 Male annual AIDS incidence rates[#] per 100,000 population by race/ethnicity, 2000-2009, San Francisco

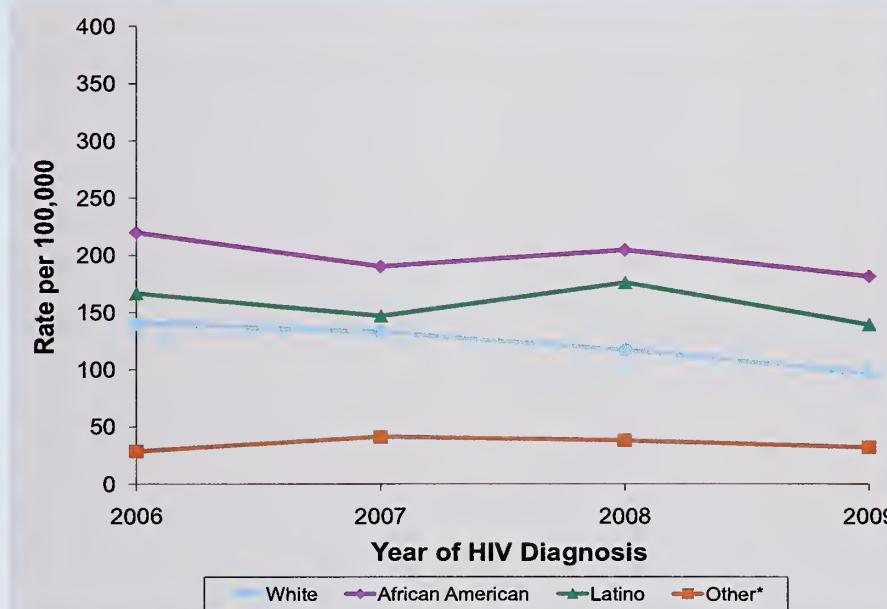


See Technical Notes "HIV/AIDS Incidence Rates."

* Cases in the "Other" race/ethnicity category include 74% Asian/Pacific Islanders and 9% Native Americans.

Among men, the incidence rates of cases diagnosed with HIV are highest in African Americans. There was a declining trend in HIV case incidence rates for white men during 2006 to 2009, while incidence rates for men of other race/ethnicity groups remained fairly level in this time period (Figure 2.4). In 2009, the incidence rate of cases diagnosed with HIV per 100,000 population was 181 among African American men, 139 among Latino men, and 96 among white men.

Figure 2.4 Annual incidence rates of male cases diagnosed with HIV infection[#] per 100,000 population by race/ethnicity, 2006-2009, San Francisco



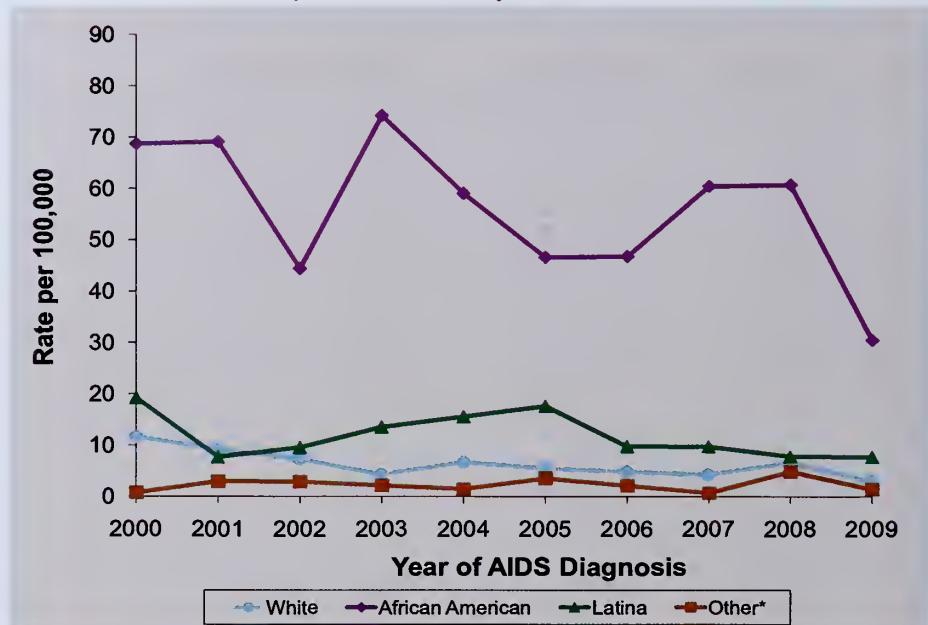
See Technical Notes "HIV/AIDS Incidence Rates." Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

* Cases in the "Other" race/ethnicity category include 78% Asian/Pacific Islanders and 9% Native Americans.

Trends in HIV/AIDS Diagnosis

AIDS incidence rates among women are much lower than among men. Throughout the epidemic, African American women have been more affected by AIDS than women of other racial/ethnic groups (Figure 2.5). In 2009, the incidence rate of AIDS per 100,000 population was 31 for African American women, 8 for Latina women, 3 for white women, and 1 for women of other race/ethnicity groups.

Figure 2.5 Female annual AIDS incidence rates[#] per 100,000 population by race/ethnicity, 2000-2009, San Francisco

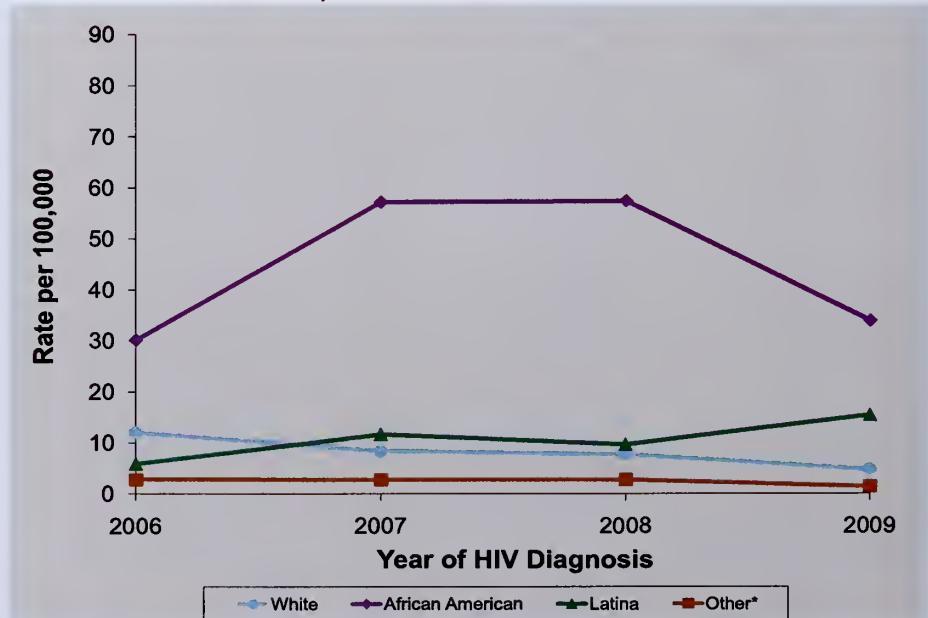


See Technical Notes "HIV/AIDS Incidence Rates."

* Cases in the "Other" race/ethnicity category include 74% Asian/Pacific Islanders and 13% Native Americans.

From 2006 to 2009, the incidence rates of cases diagnosed with HIV for African American and Latina women increased, while HIV case incidence rates for white women declined slightly (Figure 2.6). In 2009, the incidence rate of cases diagnosed with HIV per 100,000 population was 34 for African American women, 15 for Latina women, 5 for white women, and 1 for women of other race/ethnicity groups.

Figure 2.6 Annual incidence rates of female cases diagnosed with HIV infection[#] per 100,000 population by race/ethnicity, 2006-2009, San Francisco



See Technical Notes "HIV/AIDS Incidence Rates." Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

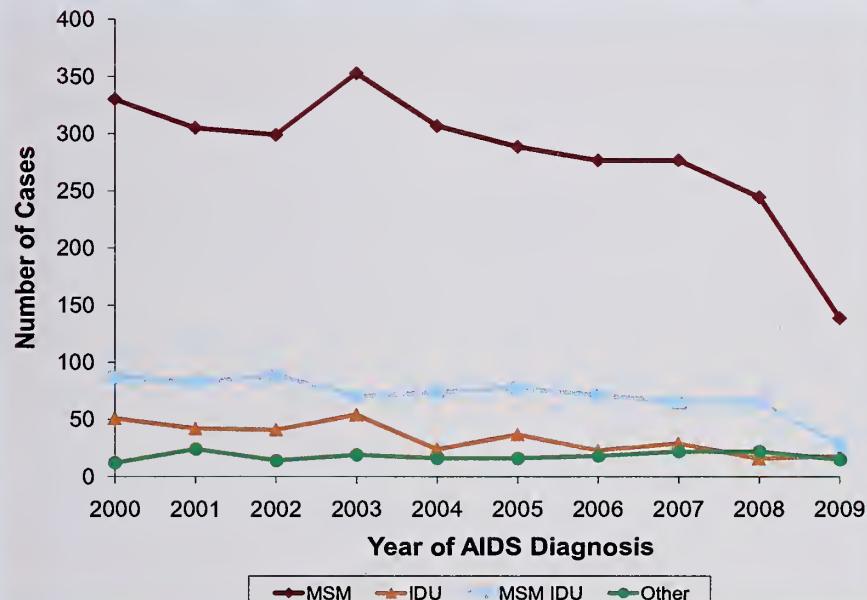
* Cases in the "Other" race/ethnicity category include 64% Asian/Pacific Islanders and 14% Native Americans.

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Exposure category

Most of the male AIDS cases in San Francisco have occurred among MSM. The number of cases among MSM has decreased between 2000 and 2009 (Figure 2.7). For MSM IDU the number of AIDS cases was fairly stable between 2003 and 2008. In 2009, 70% of male AIDS cases were MSM, 14% were MSM IDU, and 9% were heterosexual IDU.

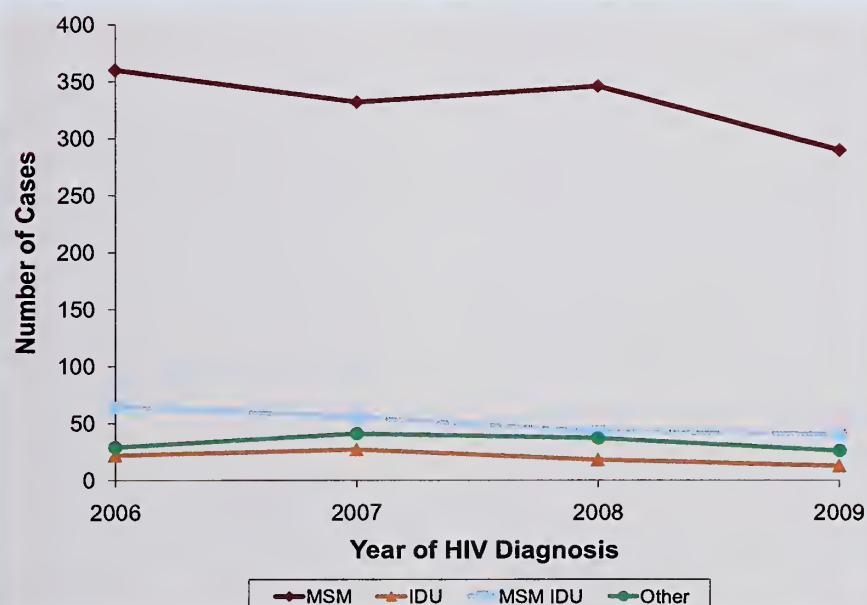
Figure 2.7 Number of male AIDS cases* by exposure category, 2000-2009, San Francisco



* Excludes male-to-female transgender AIDS cases.

In recent years, trends in the number of male HIV/AIDS cases diagnosed for most exposure categories were relatively stable (Figure 2.8). The number of MSM IDU HIV/AIDS cases declined each year from 2006 to 2009. In 2009, 79% of male HIV/AIDS cases were MSM, 11% were MSM IDU, and 4% were heterosexual IDU.

Figure 2.8 Number of male cases diagnosed with HIV infection* by exposure category, 2006-2009, San Francisco

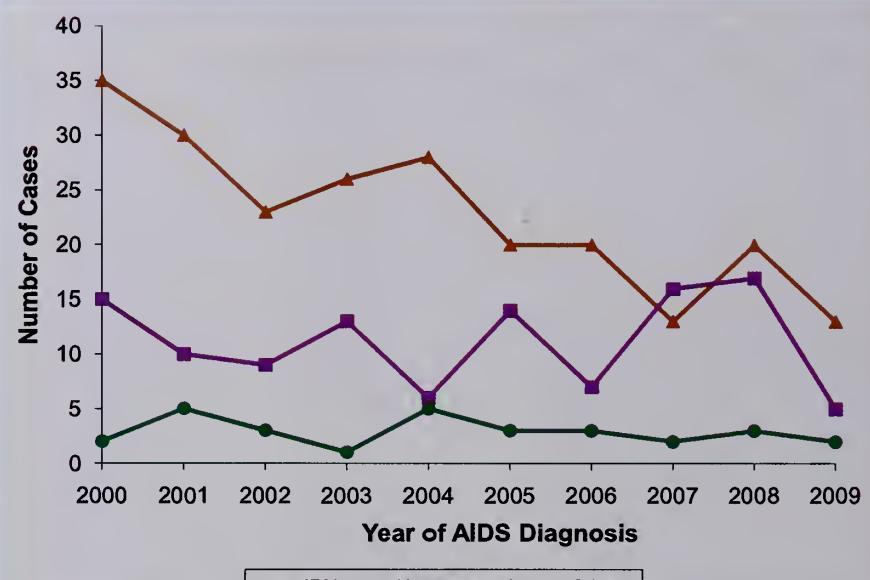


* Excludes male-to-female transgender cases diagnosed with HIV infection. Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Trends in HIV/AIDS Diagnosis

Injection drug use is the predominant exposure category for female AIDS cases, followed by heterosexual contact. The number of female IDU cases has declined since 2000, while female AIDS cases due to heterosexual contact and other exposure categories have remained stable. In 2009, 65% of female cases were due to injection drug use and 25% were attributed to heterosexual contact (Figure 2.9).

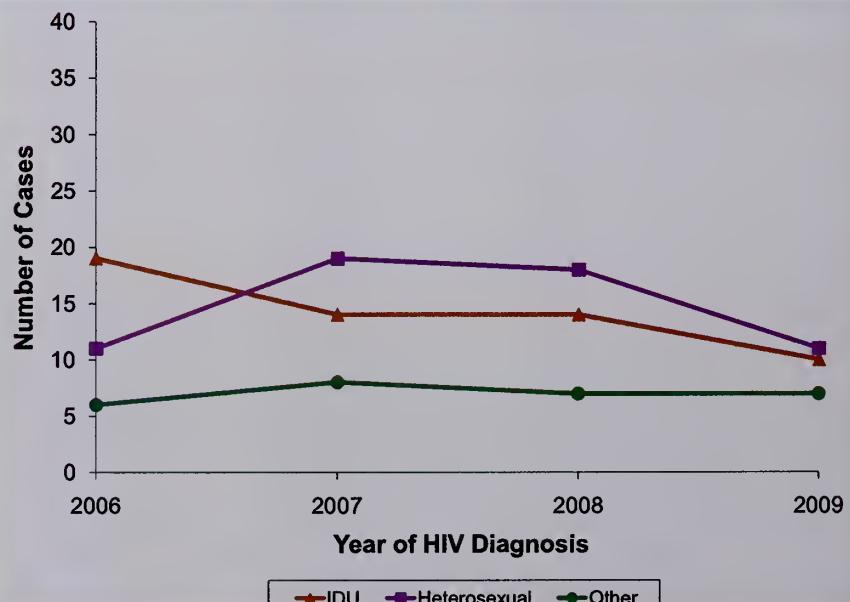
Figure 2.9 Number of female AIDS cases* by exposure category, 2000-2009, San Francisco



* Excludes female-to-male transgender AIDS cases.

When female cases diagnosed with HIV infection are examined, the number of female IDU cases and female cases due to heterosexual contact were similar (Figure 2.10). In 2007, the number of female cases diagnosed with HIV infection due to heterosexual contact overtook the number of female IDU cases. This is more similar to nationwide trends, where heterosexual contact is the leading exposure category for female HIV/AIDS cases.

Figure 2.10 Number of female cases diagnosed with HIV infection* by exposure category, 2006-2009, San Francisco



* Excludes female-to-male transgender cases diagnosed with HIV infection. Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Age

Cumulatively, the largest number of men, women, and transgender persons with AIDS were diagnosed between ages 30 and 39 years (Table 2.1). Younger persons (under the age of 30) made up a larger proportion of female and transgender AIDS cases than male AIDS cases.

For cases diagnosed in 2006-2009, there was an increase in the proportion of women diagnosed with AIDS in the 50+ year age group, as well as the proportion of men in the over 40 year age groups. The trend is different among transgender AIDS cases. In 2006-2009, the proportions of transgender persons diagnosed in the 40+ year age group and in the 13-29 year age group increased compared to the previous time period.

Table 2.1 AIDS cases by gender and age at diagnosis, diagnosed 1998-2009, San Francisco

	1998-2001		2002-2005		2006-2009		Cumulative Totals	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in Years)								
0 - 19	3	(<1)	6	(<1)	4	(<1)	49	(<1)
20 - 29	176	(8)	137	(8)	140	(11)	3,001	(11)
30 - 39	890	(43)	635	(36)	379	(28)	11,957	(45)
40 - 49	696	(34)	645	(36)	529	(40)	8,527	(32)
50+	307	(15)	355	(20)	278	(21)	3,285	(12)
Male Subtotal	2,072	(100)	1,778	(100)	1,330	(100)	26,819	(100)
Female (Age in Years)								
0 - 19	3	(2)	1	(1)	0	(0)	23	(2)
20 - 29	19	(10)	23	(15)	12	(10)	164	(14)
30 - 39	76	(39)	42	(28)	36	(30)	453	(38)
40 - 49	71	(36)	52	(34)	37	(31)	357	(30)
50+	27	(14)	33	(22)	36	(30)	194	(16)
Female Subtotal	196	(100)	151	(100)	121	(100)	1,191	(100)
Transgender (Age in Years)								
13 - 29	15	(20)	6	(9)	13	(33)	96	(24)
30 - 39	30	(41)	35	(50)	9	(23)	177	(44)
40+	29	(39)	29	(41)	18	(45)	126	(32)
Transgender Subtotal	74	(100)	70	(100)	40	(100)	399	(100)

Trends in HIV/AIDS Diagnosis

Table 2.2 shows cases diagnosed with HIV infection by the age at HIV diagnosis and year of HIV diagnosis. The largest proportion of males was diagnosed with HIV between the ages of 30 and 39 years. The distribution of age at HIV diagnosis for male cases is similar from year to year. For female cases, the proportion diagnosed in younger age groups (less than 30 years) increased between 2006 and 2008. In 2009, most females were diagnosed in the 50+ year age group.

Although the number of transgender persons diagnosed each year is small, transgender cases diagnosed with HIV infection appear younger than male and female HIV and AIDS cases at the time of HIV diagnosis.

Table 2.2 Cases diagnosed with HIV infection* by gender and age at diagnosis, diagnosed 2006-2009, San Francisco

	2006		2007		2008		2009	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in Years)								
0 - 19	6	(1)	8	(2)	8	(2)	4	(1)
20 - 29	99	(21)	119	(26)	97	(22)	99	(27)
30 - 39	176	(37)	163	(36)	164	(37)	113	(31)
40 - 49	124	(26)	114	(25)	131	(30)	101	(27)
50+	70	(15)	51	(11)	43	(10)	52	(14)
Male Subtotal	475	(100)	455	(100)	443	(100)	369	(100)
Female (Age in Years)								
0 - 19	0	(0)	0	(0)	2	(5)	0	(0)
20 - 29	6	(17)	8	(20)	11	(28)	5	(18)
30 - 39	9	(25)	12	(29)	11	(28)	7	(25)
40 - 49	15	(42)	16	(39)	10	(26)	3	(11)
50+	6	(17)	5	(12)	5	(13)	13	(46)
Female Subtotal	36	(100)	41	(100)	39	(100)	28	(100)
Transgender (Age in Years)								
13 - 29	3	(33)	8	(38)	7	(64)	6	(43)
30+	6	(67)	13	(62)	4	(36)	8	(57)
Transgender Subtotal	9	(100)	21	(100)	11	(100)	14	(100)

* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

3

Persons Living with HIV/AIDS

The number of persons living with HIV/AIDS continues to increase due to ongoing incidence of HIV combined with an increase in survival after AIDS diagnosis. Persons were counted as living in a year if their HIV diagnosis date was in or before that year and they were known to be alive at the end of the year. As of December 31, 2009, 15,836 San Francisco residents were living with HIV/AIDS (Table 3.1). Demographic and risk characteristics of persons living with HIV/AIDS remained mostly stable between 2006 and 2009; the largest numbers are white, age 40-49 years, and MSM (including MSM IDU). Age 50+ was the fastest growing age category of persons living with HIV/AIDS, rising from 35% to 42% between 2006 and 2009. This increase most likely reflects improved survival from use of antiretroviral therapy.

Table 3.1 Trends in persons living with HIV/AIDS by demographic and risk characteristics, 2006-2009*, San Francisco

	2006		2007		2008		2009	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Gender								
Male	13,896	(92)	14,076	(92)	14,360	(92)	14,575	(92)
Female	877	(6)	890	(6)	905	(6)	918	(6)
Transgender	326	(2)	332	(2)	332	(2)	343	(2)
Race/Ethnicity								
White	9,703	(64)	9,793	(64)	9,921	(64)	10,016	(63)
African American	2,117	(14)	2,123	(14)	2,158	(14)	2,186	(14)
Latino	2,279	(15)	2,339	(15)	2,426	(16)	2,504	(16)
Asian/Pacific Islander	692	(5)	732	(5)	772	(5)	802	(5)
Native American	97	(1)	95	(1)	98	(1)	100	(1)
Other/Unknown	211	(1)	216	(1)	222	(1)	228	(1)
Age in Years (at end of each year)								
0 - 19	36	(<1)	35	(<1)	32	(<1)	25	(<1)
20 - 29	629	(4)	636	(4)	631	(4)	622	(4)
30 - 39	2,944	(19)	2,760	(18)	2,606	(17)	2,384	(15)
40 - 49	6,253	(41)	6,211	(41)	6,163	(40)	6,084	(38)
50+	5,237	(35)	5,656	(37)	6,165	(40)	6,721	(42)
Exposure Category								
MSM	10,887	(72)	11,071	(72)	11,326	(73)	11,521	(73)
IDU	1,207	(8)	1,186	(8)	1,185	(8)	1,186	(7)
MSM IDU	2,135	(14)	2,116	(14)	2,111	(14)	2,125	(13)
Heterosexual	384	(3)	414	(3)	438	(3)	448	(3)
Transfusion/Hemophilia	36	(<1)	36	(<1)	36	(<1)	35	(<1)
Other/Unidentified	450	(3)	475	(3)	501	(3)	521	(3)
Total	15,099		15,298		15,597		15,836	

* Persons living with HIV/AIDS at the end of each year.

Person Living with HIV/AIDS

As of December 31, 2009, a total of 9,489 persons were living with AIDS in San Francisco (Table 3.2). This number includes persons diagnosed with HIV in geographic areas outside San Francisco who were diagnosed with AIDS in San Francisco. It also includes persons who were San Francisco residents at HIV diagnosis and progressed to AIDS while they were a resident in another jurisdiction. Ninety-two percent were male, 6% were female, and 2% were transgender. Among men, the majority of cases were white. MSM accounted for the largest proportion of living male AIDS cases within all racial/ethnic groups. Among living African American male AIDS cases, heterosexual IDU and MSM IDU accounted for equal proportions (21%). For white and African American men, half or more of living AIDS cases were 50 years of age or older. By comparison, Latino, Latino, Asian Pacific Islander, and Native American men living with AIDS were younger, with the majority between the ages of 25 and 49 years old.

Among women living with AIDS, African American was the largest racial/ethnic group (44%) followed by white (29%). The most frequent exposure categories for living female AIDS cases were injection drug use and heterosexual contact. Similar to living male AIDS cases, the majority of living female AIDS cases were 25-49 years of age.

Table 3.2 Persons living with AIDS by gender, exposure category, age and race/ethnicity, December 2009, San Francisco

	White Number	African American Number	Latino Number	Asian/Pacific Islander & Native American Number	Total Number*
Male					
Exposure category					
MSM	4,730 (81)	535 (52)	1,105 (81)	364 (80)	6,767
IDU	186 (3)	211 (21)	52 (4)	19 (4)	472
MSM IDU	868 (15)	212 (21)	155 (11)	48 (11)	1,299
Heterosexual	17 (<1)	36 (4)	26 (2)	8 (2)	89
Other	5 (<1)	4 (<1)	4 (<1)	6 (1)	20
No reported risk	35 (1)	28 (3)	23 (2)	12 (3)	98
Age in Years (at end of 2009)					
<13	0 (0)	0 (0)	1 (0)	0 (0)	2
13 - 24	6 (<1)	9 (1)	11 (1)	5 (1)	32
25 - 49	2,609 (45)	497 (48)	880 (64)	283 (62)	4,308
50+	3,226 (55)	520 (51)	473 (35)	169 (37)	4,403
Male Subtotal	5,841	1,026	1,365	457	8,745
Female					
Exposure category					
IDU	102 (64)	159 (65)	36 (39)	13 (27)	315
Heterosexual	42 (26)	67 (28)	46 (49)	27 (56)	182
Other	5 (3)	6 (2)	6 (6)	4 (8)	21
No reported risk	10 (6)	11 (5)	5 (5)	4 (8)	31
Age in Years (at end of 2009)					
13 - 24	0 (0)	5 (2)	4 (4)	1 (2)	10
25 - 49	98 (62)	108 (44)	51 (55)	32 (67)	293
50+	61 (38)	130 (53)	38 (41)	15 (31)	246
Female Subtotal	159	243	93	48	549
Transgender	44	61	63	27	195
Total	6,044	1,330	1,521	532	9,489

* Includes persons with multiple race or whose race/ethnicity information is not available.

As of December 31, 2009, 6,347 living HIV non-AIDS cases (persons living with HIV who had not developed AIDS) had been reported in San Francisco (Table 3.3). Demographic and risk characteristics for living HIV non-AIDS cases were similar to living AIDS cases. Ninety-two percent were male, 6% were female, and 2% were transgender. The majority of living male HIV non-AIDS cases were white and MSM. The majority of living female HIV non-AIDS cases were African American and IDU. Among both men and women, persons between 25-49 years old accounted for the largest number of living HIV cases.

Table 3.3 Persons living with HIV non-AIDS by gender, exposure category, age and race/ethnicity, December 2009, San Francisco

	White Number (%)	African American Number (%)	Latino Number (%)	Asian/Pacific Islander & Native American Number (%)	Total Number*
Male					
<i>Exposure Category</i>					
MSM	3,142 (82)	363 (56)	726 (82)	273 (85)	4,579
IDU	105 (3)	99 (15)	20 (2)	7 (2)	233
MSM IDU	458 (12)	94 (15)	75 (8)	28 (9)	668
Heterosexual	12 (<1)	24 (4)	16 (2)	2 (1)	55
Other	5 (<1)	2 (<1)	4 (<1)	1 (0)	12
No reported risk	112 (3)	62 (10)	44 (5)	10 (3)	283
<i>Age in Years (at end of 2009)</i>					
13 - 24	38 (1)	27 (4)	32 (4)	10 (3)	110
25 - 49	2,454 (64)	344 (53)	704 (80)	271 (84)	3,875
50+	1,342 (35)	273 (42)	149 (17)	40 (12)	1,845
Male Subtotal	3,834	644	885	321	5,830
Female					
<i>Exposure Category</i>					
IDU	59 (56)	68 (43)	22 (37)	8 (28)	162
Heterosexual	22 (21)	54 (34)	21 (35)	16 (55)	117
Other	3 (3)	2 (1)	3 (5)	0 (0)	10
No reported risk	21 (20)	34 (22)	14 (23)	5 (17)	80
<i>Age in Years (at end of 2009)</i>					
<13	0 (0)	1 (1)	2 (3)	0 (0)	3
13 - 24	3 (3)	4 (3)	7 (12)	0 (0)	16
25 - 49	78 (74)	82 (52)	38 (63)	18 (62)	224
50+	24 (23)	71 (45)	13 (22)	11 (38)	126
Female Subtotal	105	158	60	29	369
Transgender	33	54	38	20	148
Total	3,972	856	983	370	6,347

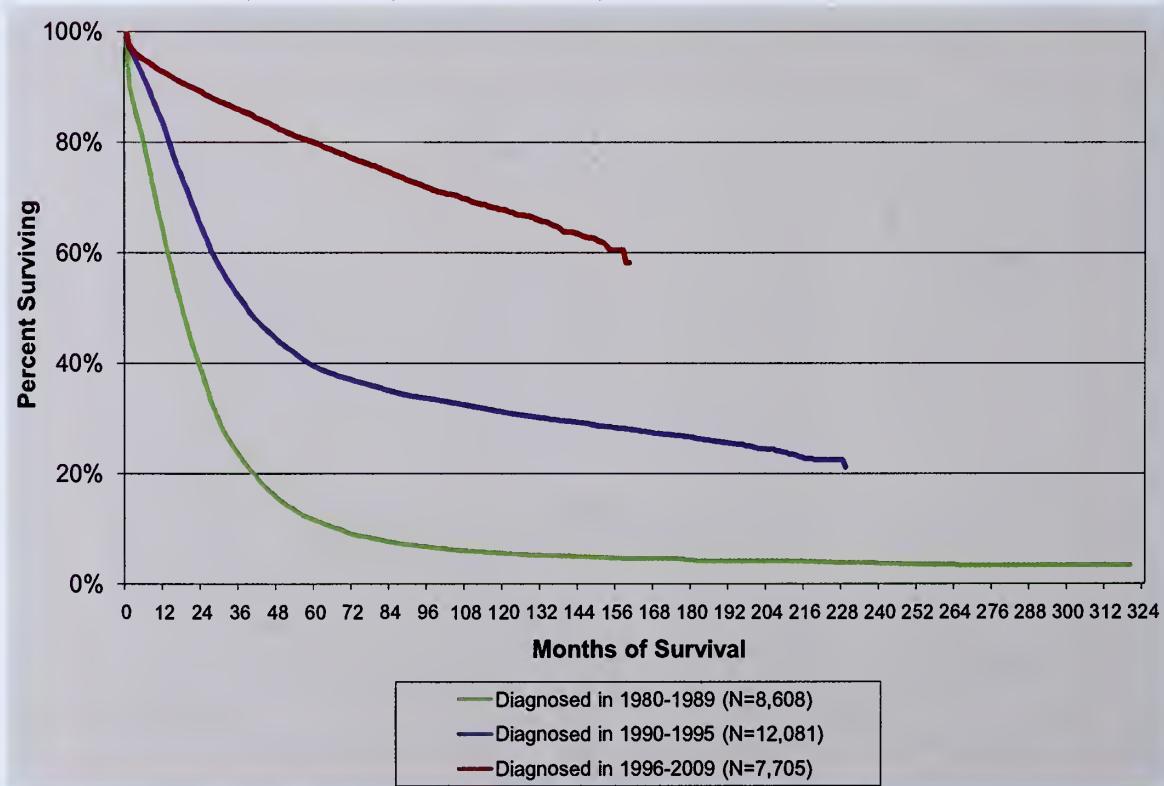
* Includes persons with multiple race or whose race/ethnicity information is not available.

4

Survival among Persons with AIDS

The Kaplan-Meier survival curves in Figure 4.1 demonstrate that survival improved for San Francisco AIDS cases between 1996 and 2009, compared to persons diagnosed in earlier time periods. Survival was poor for persons diagnosed in the first ten years of the AIDS epidemic (1980-1989) with 50% cases surviving 18 months (median survival time) after AIDS diagnosis. Between 1990 and 1995, survival improved; median survival time was 38 months. Approximately 58% of persons diagnosed with AIDS between 1996 and 2009 are still alive as of December 31, 2009. Improved survival among persons diagnosed with AIDS after 1995 is attributed to more effective antiretroviral therapies.

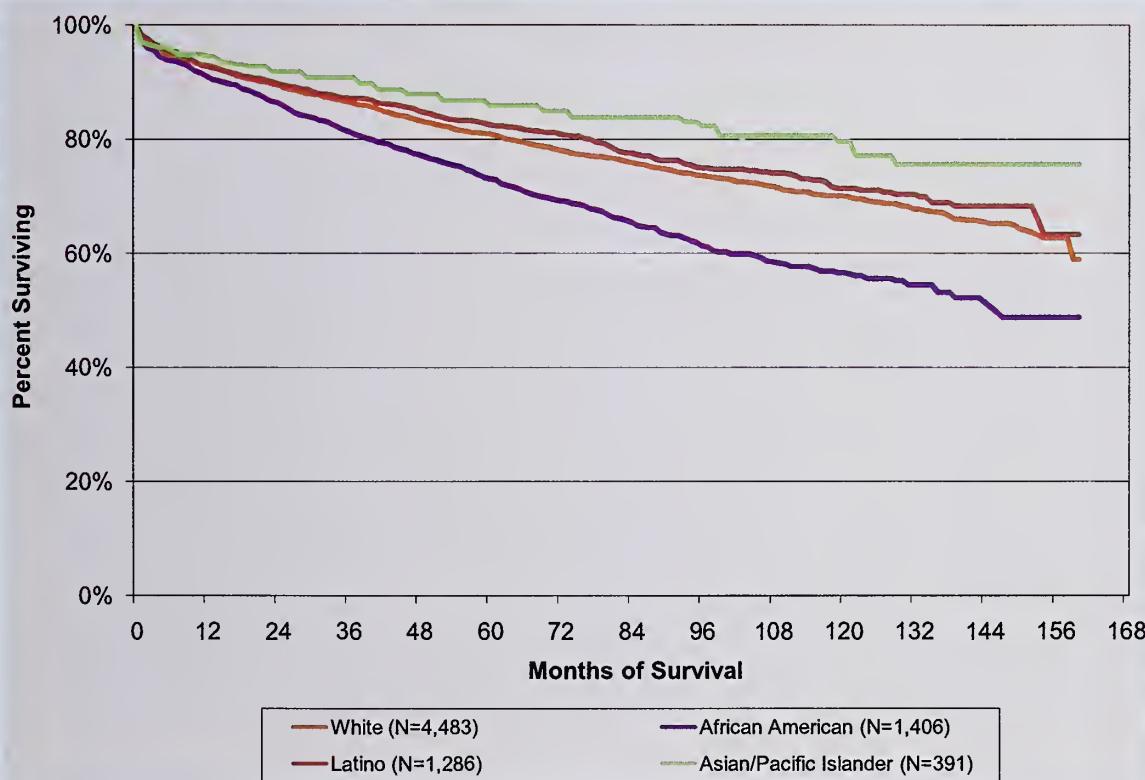
Figure 4.1 Kaplan-Meier survival* curves for persons diagnosed with AIDS in 1980-1989, 1990-1995, and 1996-2009, San Francisco



* See Technical Notes "AIDS Survival."

Survival after AIDS diagnosis is worse for African Americans than other race/ethnic groups (Figure 4.2). Among persons diagnosed between 1996 and 2009, the percent of African Americans surviving 60 months (5 years) after AIDS was 73%, compared to 81% for whites, 83% for Latinos, and 86% for Asians/Pacific Islanders.

Figure 4.2 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2009 by race/ethnicity, San Francisco



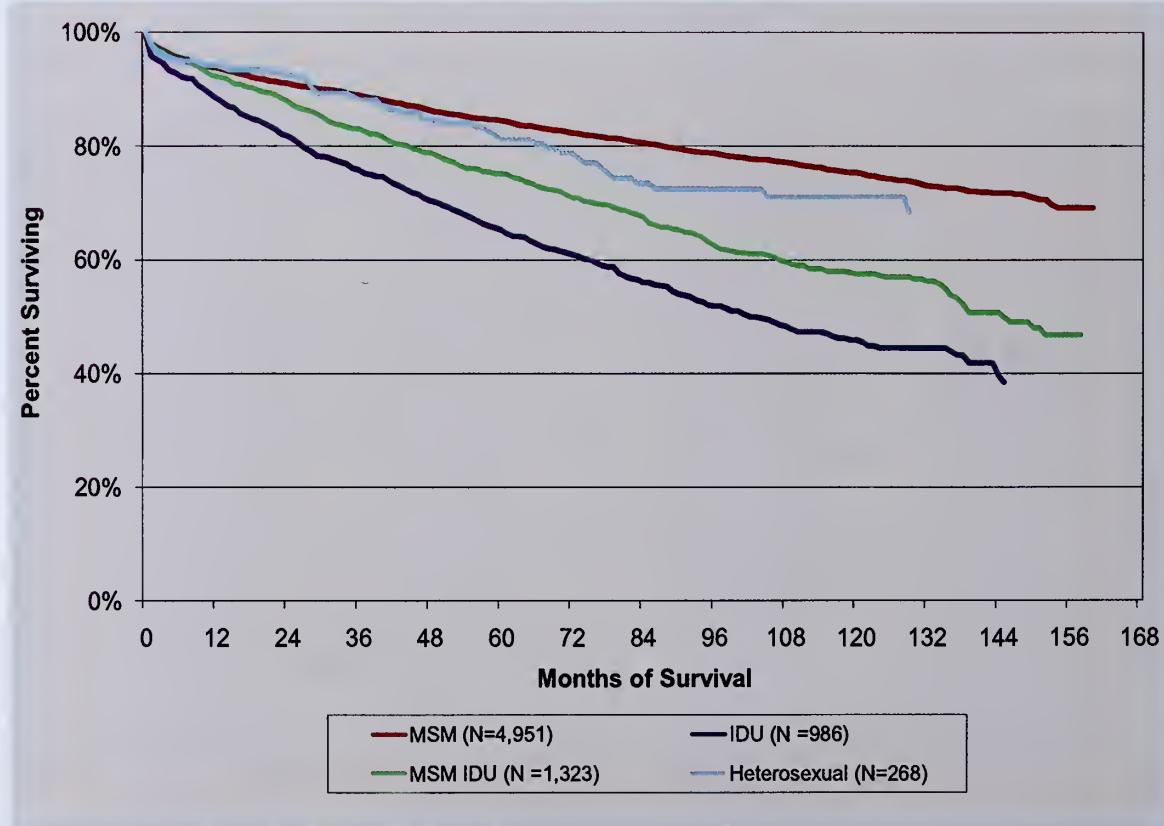
* See Technical Notes "AIDS Survival."

Survival among Persons with AIDS

Survival after AIDS diagnosis has been better for MSM and heterosexuals compared to MSM IDU and heterosexual IDU. For AIDS cases diagnosed in 1996 to 2009, the 5-year (60 months) survival was 84% for MSM, 81% for heterosexuals, 75% for MSM IDU, and 65% for heterosexual IDU (Figure 4.3).

Worse survival among IDU partly reflects higher death rates from causes associated with drug use such as overdose, liver disease, and other infections.

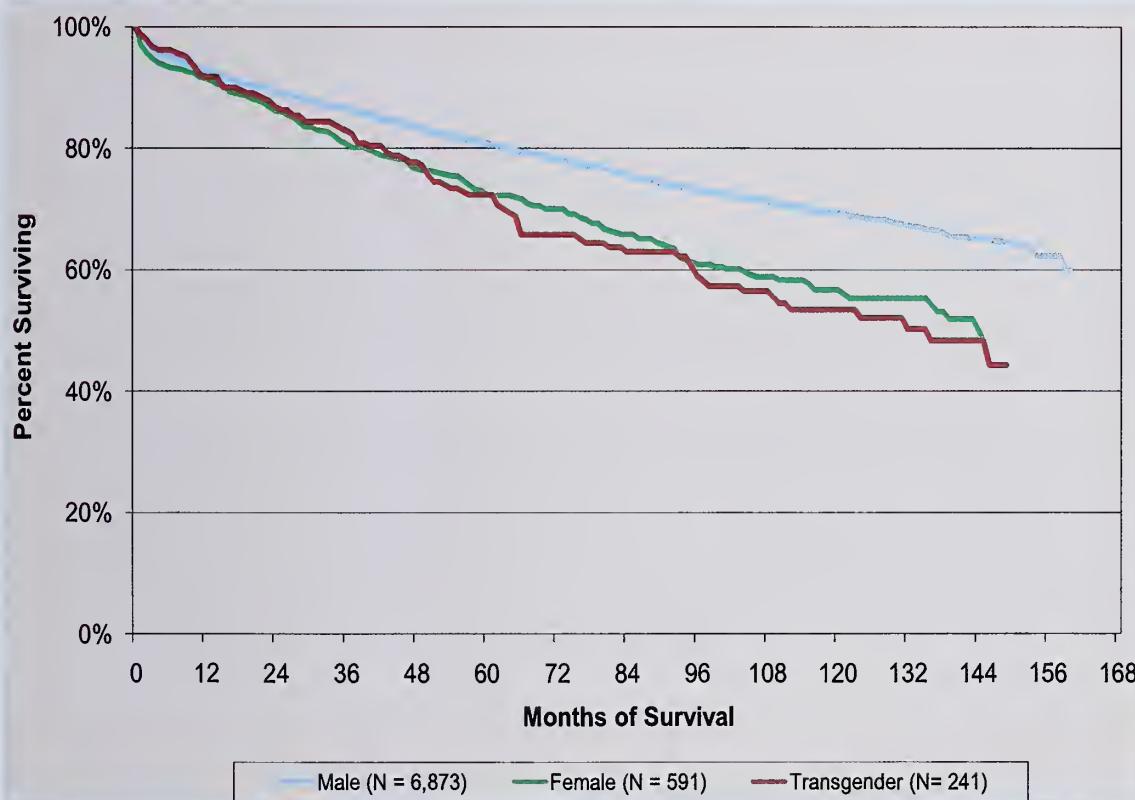
Figure 4.3 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2009 by exposure category, San Francisco



* See Technical Notes "AIDS Survival."

By gender, male AIDS cases have better survival than female and transgender AIDS cases. The Kaplan-Meier curves show that female and transgender AIDS cases have similar survival (Figure 4.4). The 5-year (60 months) survival was 81% for men, 72% for women and 72% for transgender persons. The differences in survival by gender are consistent with lower use of highly active antiretroviral therapies among women and transgender AIDS cases.

Figure 4.4 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2009 by gender, San Francisco

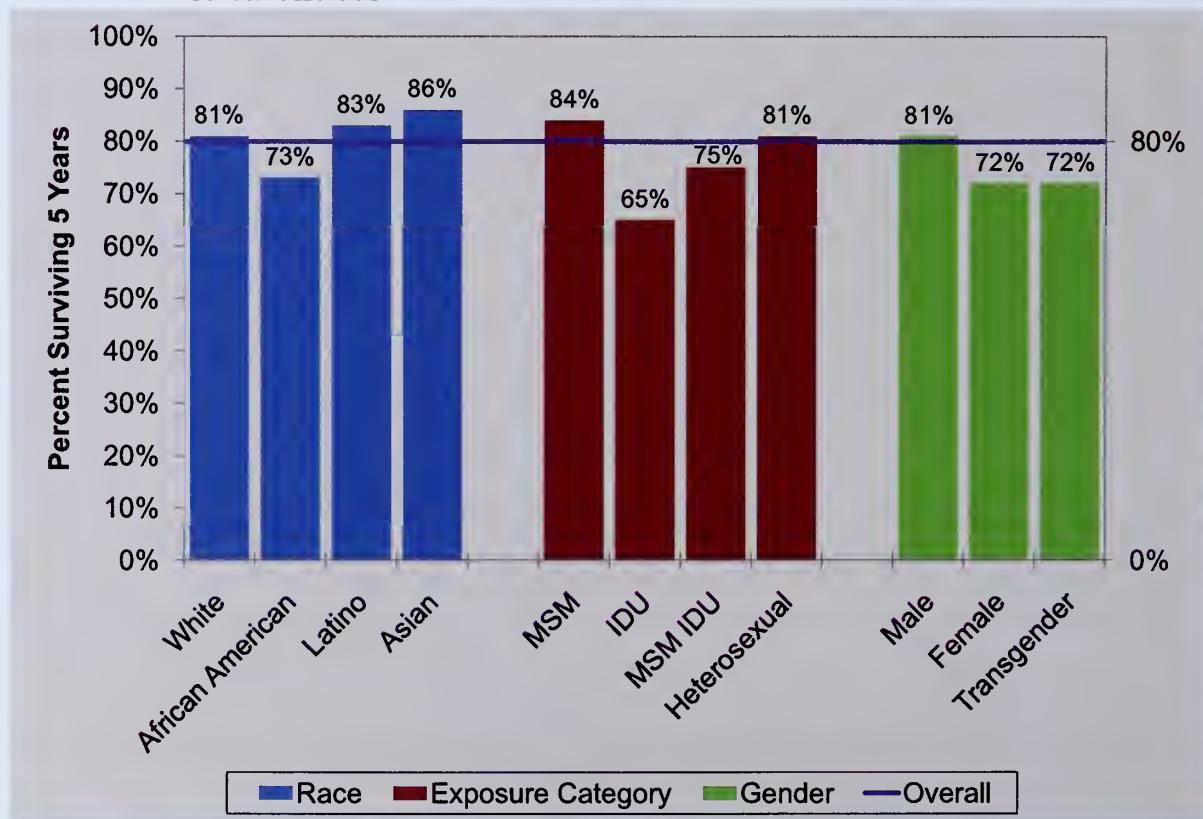


* See Technical Notes "AIDS Survival."

Survival among Persons with AIDS

The overall 5-year survival after AIDS for persons diagnosed with AIDS between 1996 and 2009 is 80% (Figure 4.5). Differences in survival occurred across race/ethnicity, exposure category, and gender groups. African Americans, IDU, MSM IDU, women, and transgender persons with AIDS have lower proportions surviving five years compared to other groups.

Figure 4.5 Proportion surviving five years after AIDS for persons diagnosed with AIDS between 1996 and 2009 by race/ethnicity, exposure category, and gender, San Francisco



5

Trends in HIV/AIDS Mortality

HIV/AIDS surveillance data

As of December 31, 2009, a total of 19,080 deaths have occurred among San Francisco AIDS cases since the beginning of the epidemic (Table 5.1). Reporting of deaths in recent years is not yet complete. The number of AIDS deaths was fairly stable across gender, race/ethnicity, and exposure categories between 2006 and 2007. Cumulatively, numbers of deaths in the 30-39 year old age group and 40-49 year old age group are similar. However, in recent years, the largest number of deaths has shifted to the 40-49 year old age group, followed closely by the 50-59 year old age group with the second largest number of deaths.

Table 5.1 Deaths in persons with AIDS, by demographic and risk characteristics, 2006-2009, San Francisco

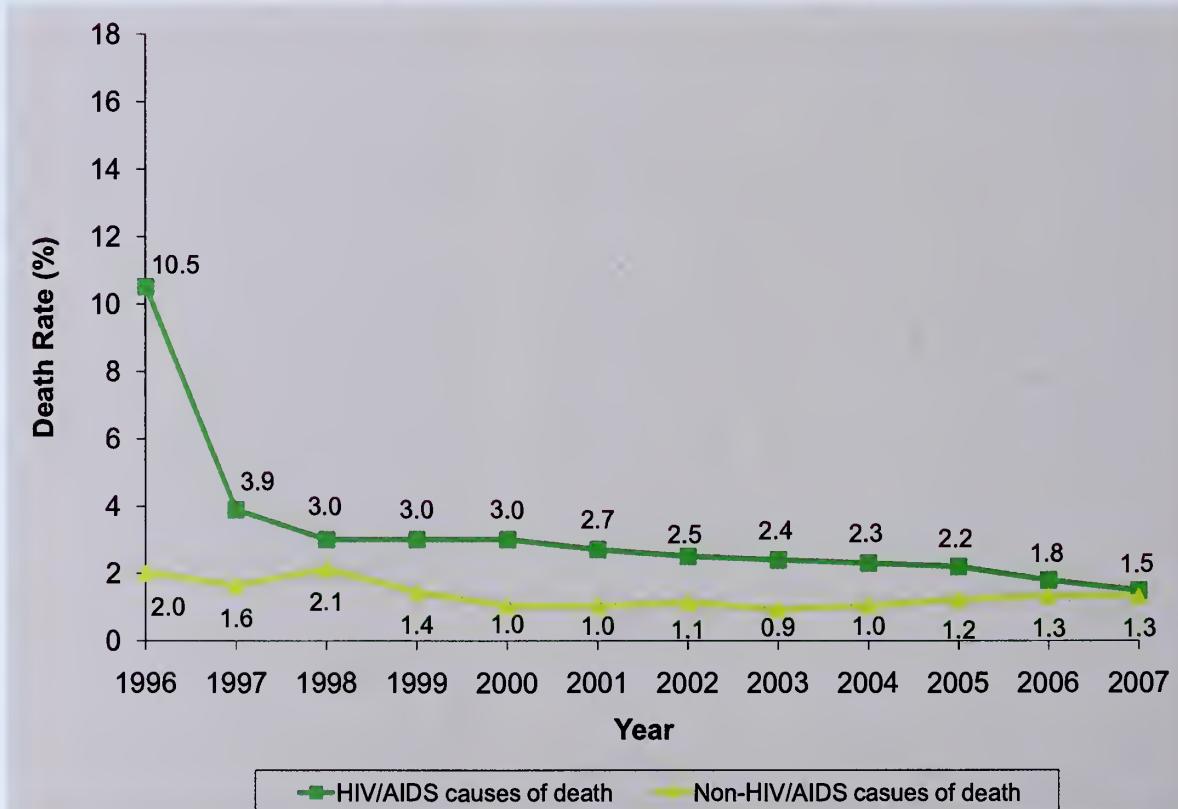
	Year of Death					Cumulative Totals as of 12/31/2009			
	2006		2007		2008*				
	Number	(%)	Number	(%)	Number	(%)			
Gender									
Male	244	(85)	234	(88)	140	(81)	129	(93)	18,217
Female	32	(11)	19	(7)	22	(13)	6	(4)	657
Transgender	12	(4)	14	(5)	11	(6)	3	(2)	206
Race/Ethnicity									
White	173	(60)	161	(60)	107	(62)	90	(65)	14,171
African American	55	(19)	57	(21)	39	(23)	28	(20)	2,279
Latino	35	(12)	36	(13)	20	(12)	15	(11)	1,960
Other	25	(9)	13	(5)	7	(4)	5	(4)	670
Exposure Category									
MSM	160	(56)	142	(53)	89	(51)	87	(63)	14,303
IDU	48	(17)	47	(18)	28	(16)	16	(12)	1,391
MSM IDU	67	(23)	70	(26)	46	(27)	29	(21)	2,927
Heterosexual	6	(2)	7	(3)	4	(2)	2	(1)	182
Other/Unidentified	7	(2)	1	(0)	6	(3)	4	(3)	277
Age at Death (years)									
0 - 29	1	(0)	5	(2)	1	(1)	3	(2)	1,070
30 - 39	30	(10)	24	(9)	13	(8)	10	(7)	7,165
40 - 49	122	(42)	90	(34)	61	(35)	37	(27)	7,158
50 - 59	96	(33)	86	(32)	66	(38)	50	(36)	2,694
60+	39	(14)	62	(23)	32	(18)	38	(28)	993
Total	288	(100)	267	(100)	173	(100)	138	(100)	19,080

* Data are incomplete due to reporting delay. In addition, deaths that occurred outside of San Francisco are primarily identified through matching with the National Death Index (NDI) which is complete only through 2007.

Trends in HIV/AIDS Mortality

The trend in death rates in persons with AIDS was examined by the single, underlying cause of death for each person. The death rate due to HIV/AIDS-related causes declined from 10.5 per 100 persons with AIDS in 1996 to 1.5 per 100 persons with AIDS in 2007 (Figure 5.1). The death rate due to HIV/AIDS-related causes was steady between 1998 and 2001 and slightly declined through 2007. For non-HIV/AIDS-related causes of death, the trend shows a slight increase beginning with 0.9 per 100 persons in 2003 to 1.3 per 100 persons in 2007. The dramatic drop in death rates beginning in 1996 and the increase in non-HIV/AIDS-related causes of death reflect the impact of highly active antiretroviral therapies.

Figure 5.1 Death rates* due to HIV/AIDS-related and non-HIV/AIDS-related causes among persons with AIDS, 1996-2007, San Francisco



* Death rates are calculated as the number of persons with AIDS who died each year divided by the number of total AIDS cases for that year. See Technical Notes for "Causes of Death."

The proportion of deaths in which HIV/AIDS was listed as the underlying cause of death decreased from 74% of AIDS deaths occurring in 1996-1999 to 62% in 2004-2007 (Table 5.2). Other frequently occurring underlying causes of death in 2004-2007 include non-AIDS cancer (9.6%), heart disease (6.1%) and suicide (3.1%). The proportion of deaths related to substance abuse (drug overdose and mental disorders due to substance use) also increased over the three time periods.

Table 5.2 Underlying causes of death among persons with AIDS*, 1996-2007, San Francisco

Underlying Cause of Death [#]	Year of Death					
	1996-1999 N=2,102		2000-2003 N= 1,236		2004-2007 N= 1,140	
	Number	(%)	Number	(%)	Number	(%)
HIV/AIDS	1,563	(74.4)	894	(72.3)	706	(61.9)
Non-AIDS cancer	87	(4.1)	83	(6.7)	110	(9.6)
Lung cancer	21	(1.0)	27	(2.2)	33	(2.9)
Liver cancer	16	(0.8)	13	(1.1)	24	(2.1)
Anal cancer	6	(0.3)	5	(0.4)	5	(0.4)
Heart disease	53	(2.5)	64	(5.2)	70	(6.1)
Coronary heart disease	21	(1.0)	44	(3.6)	34	(3.0)
Cardiomyopathy	11	(0.5)	5	(0.4)	10	(0.9)
Drug overdose	53	(2.5)	25	(2.0)	52	(4.6)
Suicide	29	(1.4)	19	(1.5)	35	(3.1)
Mental disorders due to substance use	16	(0.8)	17	(1.4)	27	(2.4)
Chronic obstructive lung disease	12	(0.6)	16	(1.3)	22	(1.9)
Liver disease	27	(1.3)	28	(2.3)	19	(1.7)
Liver cirrhosis	10	(0.5)	13	(1.1)	12	(1.1)
Alcoholic liver disease	14	(0.7)	12	(1.0)	6	(0.5)
Viral hepatitis	57	(2.7)	7	(0.6)	7	(0.6)
Cerebrovascular disease	12	(0.6)	16	(1.3)	5	(0.4)
Renal disease	6	(0.3)	3	(0.2)	4	(0.4)
Septicemia	6	(0.3)	3	(0.2)	4	(0.4)
Pancreatitis	8	(0.4)	2	(0.2)	2	(0.2)

* Deceased AIDS cases without cause of death information are not represented in this table.

See Technical Notes "Causes of Death."

Trends in HIV/AIDS Mortality

Table 5.3 shows both underlying and contributory causes of death among persons with AIDS. Through the three time periods, the proportion of deaths with HIV/AIDS-related causes decreased, with the proportion falling below 80% of deaths in AIDS cases in 2004-2007. The relative contribution of several causes of death appeared level between time periods 2000-2003 and 2004-2007 (heart disease, cerebrovascular disease). Deaths due to non-AIDS cancer showed the largest percentage increase between time periods 2000-2003 and 2004-2007.

Table 5.3 Multiple causes of death among persons with AIDS*, 1996-2007, San Francisco

Multiple Causes of Death [#]	Year of Death					
	1996-1999 N = 2,102		2000-2003 N = 1,236			
	No.	(%)	No.	(%)	No.	(%)
HIV/AIDS	1,877	(89.3)	1,071	(86.7)	889	(78.0)
Heart disease	334	(15.9)	253	(20.5)	233	(20.4)
Coronary heart disease	39	(1.9)	70	(5.7)	60	(5.3)
Cardiomyopathy	39	(1.9)	23	(1.9)	26	(2.3)
Viral hepatitis	124	(5.9)	164	(13.3)	158	(13.9)
Liver disease	189	(9.0)	193	(15.6)	156	(13.7)
Liver cirrhosis	67	(3.2)	79	(6.4)	72	(6.3)
Alcoholic liver disease	20	(1.0)	16	(1.3)	7	(0.6)
Non-AIDS cancer	167	(7.9)	117	(9.5)	156	(13.7)
Lung cancer	25	(1.2)	31	(2.5)	34	(3.0)
Liver cancer	20	(1.0)	16	(1.3)	27	(2.4)
Anal cancer	8	(0.4)	8	(0.6)	8	(0.7)
Pneumonia	300	(14.3)	187	(15.1)	153	(13.4)
Renal disease	112	(5.3)	106	(8.6)	132	(11.6)
Septicemia	149	(7.1)	134	(10.8)	132	(11.6)
Mental disorders due to substance use	63	(3.0)	70	(5.7)	100	(8.8)
Chronic obstructive lung disease	44	(2.1)	49	(4.0)	67	(5.9)
Drug overdose	65	(3.1)	35	(2.8)	58	(5.1)
Suicide	29	(1.4)	19	(1.5)	35	(3.1)
Cerebrovascular disease	43	(2.0)	35	(2.8)	32	(2.8)
Aspergillosis	52	(2.5)	14	(1.1)	4	(0.4)

* Deceased AIDS cases without cause of death information are not represented in this table.

Includes underlying and contributory causes of death. Individuals may have more than one cause of death. See Technical Notes "Causes of Death."

Since 1996, the median age at death among persons with AIDS has increased over time, from 43 years in 1996-1999 to 48 years in 2004-2007 (Table 5.4). Broken down by underlying cause of death, this holds true for HIV/AIDS and many non-HIV/AIDS-related causes, including heart disease, mental disorders due to substance use, and suicide. For other underlying causes (such as non-AIDS-related cancer, viral hepatitis, and drug overdose), the median age at death has had an overall increase between 1996-1999 and 2004-2007, but remained stable between 2000-2003 and 2004-2007. The median age at death actually decreased for liver disease between 2000-2003 and 2004-2007, and for pancreatitis between 1996-1999 and 2004-2007. In the time period 2004-2007, the median age at death was above 50 years for non-AIDS-related cancer, heart disease, chronic obstructive lung disease, cerebrovascular disease, and renal disease. The increase in survival, attributed to improved treatment for HIV disease, contributes to the increases in the median age at death for both HIV-related and non-HIV-related causes by virtue of persons living long enough to acquire other conditions. However, persons with HIV/AIDS continue to die at younger ages compared to uninfected persons.

Table 5.4 Median age at death among persons with AIDS by underlying cause of death, 1996-2007, San Francisco

Underlying Cause of Death*	Year of Death		
	1996-1999	2000-2003	2004-2007
	Median Age (Years)		
HIV/AIDS	42.0	45.0	48.0
Non-AIDS cancer	48.0	53.0	52.0
Heart disease	46.0	51.0	53.5
Liver disease	45.0	49.5	46.0
Viral hepatitis	44.0	47.0	47.0
Drug overdose	41.0	46.0	46.5
Mental disorders due to substance use	42.0	45.0	48.0
Suicide	41.0	44.0	47.0
Chronic obstructive lung disease	51.0	52.0	56.0
Cerebrovascular disease	44.5	50.5	56.0
Septicemia	42.5	46.0	48.5
Renal disease	41.5	59.0	62.5
Pancreatitis	52.0	44.0	49.0
Aspergillosis	41.5	N/A	N/A
All deaths	43.0	45.0	48.0

* See Technical Notes "Causes of Death."

Trends in HIV/AIDS Mortality

HIV/AIDS remains the leading underlying cause of death among persons with HIV/AIDS in all age groups, although the absolute number and proportion of deaths due to HIV/AIDS have been declining over time. Table 5.5 shows that the underlying causes of death common for HIV/AIDS cases deceased between 1996 to 2007. The proportion of deaths due to HIV/AIDS has been higher among persons under 40 years of age. Among persons aged 40 and over, non-AIDS-related cancer continues to be the second leading cause of death. Non-AIDS cancer deaths increased between the periods 2000-2003 and 2004-2007 in persons aged 40-49 years and 60 years and above. Among persons aged 50-59 years, deaths due to non-AIDS-related cancer decreased while the proportion of HIV/AIDS-related deaths increased in this age group but none of the others. Heart disease has consistently been a leading cause of death among persons aged 40 and over, and the proportion of deaths due to heart disease has been relatively stable since 2000. For persons under 40 years old, drug overdose and suicide have contributed to a larger proportion of deaths over time.

Table 5.5 Leading underlying causes of death among persons with AIDS by age group, 1996-2007, San Francisco

Age at Death (Years)	Year of Death					
	1996-1999		2000-2003		2004-2007	
	Underlying Cause	Number (%)	Underlying Cause	Number (%)	Underlying Cause	Number (%)
Under 30	1. HIV/AIDS	53 (81.5)	1. HIV/AIDS	17 (94.4)	1. HIV/AIDS	10 (76.9)
	2. Aspergillosis	2 (3.1)	2. Suicide	1 (5.6)	2. Suicide	1 (7.7)
	2. Pneumonia	2 (3.1)				
30-39	1. HIV/AIDS	539 (78.1)	1. HIV/AIDS	208 (80.3)	1. HIV/AIDS	99 (67.8)
	2. Drug overdose	22 (3.2)	2. Heart disease	10 (3.9)	2. Drug overdose	11 (7.5)
	3. Non-AIDS cancer	15 (2.2)	3. Drug overdose	5 (1.9)	3. Suicide	8 (5.5)
	4. Aspergillosis	14 (2.0)	3. Non-AIDS cancer	5 (1.9)	4. Heart disease	4 (2.7)
	5. Viral hepatitis	13 (1.9)	5. Liver disease	4 (1.5)	4. Mental disorders*	4 (2.7)
			5. Suicide	4 (1.5)	4. Non-AIDS cancer	4 (2.7)
40-49	1. HIV/AIDS	669 (73.9)	1. HIV/AIDS	415 (78.2)	1. HIV/AIDS	282 (63.2)
	2. Non-AIDS cancer	33 (3.7)	2. Non-AIDS cancer	19 (3.6)	2. Non-AIDS cancer	39 (8.7)
	3. Viral hepatitis	32 (3.5)	3. Heart disease	17 (3.2)	3. Drug overdose	25 (5.6)
	4. Drug overdose	26 (2.9)	4. Drug overdose	14 (2.6)	4. Heart disease	21 (4.7)
	5. Heart disease	18 (2.0)	5. Liver disease	10 (1.9)	5. Mental disorders*	14 (3.1)
					5. Suicide	14 (3.1)
50-59	1. HIV/AIDS	233 (70.6)	1. HIV/AIDS	190 (58.3)	1. HIV/AIDS	214 (62.4)
	2. Non-AIDS cancer	24 (7.3)	2. Non-AIDS cancer	45 (13.8)	2. Non-AIDS cancer	35 (10.2)
	3. Heart disease	15 (4.6)	3. Heart disease	25 (7.7)	3. Heart disease	23 (6.7)
	4. Viral hepatitis	11 (3.3)	4. Liver disease	13 (4.0)	4. Drug overdose	14 (4.1)
	5. Liver disease	5 (1.5)	5. COPD#	9 (2.8)	5. COPD#	11 (3.2)
60 and over	1. HIV/AIDS	69 (61.6)	1. HIV/AIDS	63 (61.8)	1. HIV/AIDS	100 (52.1)
	2. Non-AIDS cancer	14 (12.5)	2. Non-AIDS cancer	14 (13.7)	2. Non-AIDS cancer	32 (16.7)
	3. Heart disease	8 (7.1)	3. Heart disease	12 (11.8)	3. Heart disease	22 (11.5)
	4. COPD#	4 (3.6)	4. COPD#	4 (3.9)	4. COPD#	6 (3.1)
	5. Suicide	3 (2.7)	5. Cerebrovascular disease	3 (2.9)	5. Liver disease	4 (2.1)

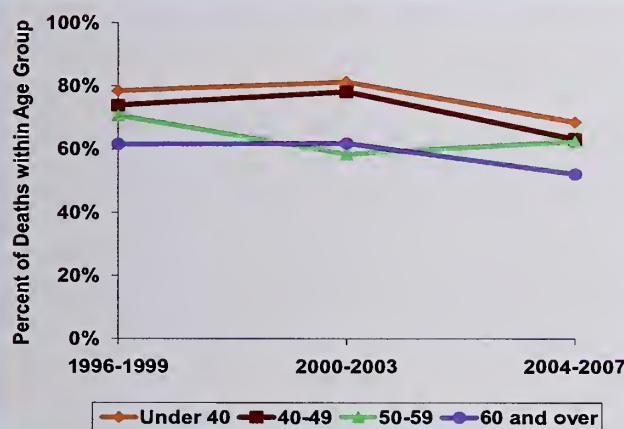
* Mental disorders due to substance use.

COPD: Chronic obstructive pulmonary disease.

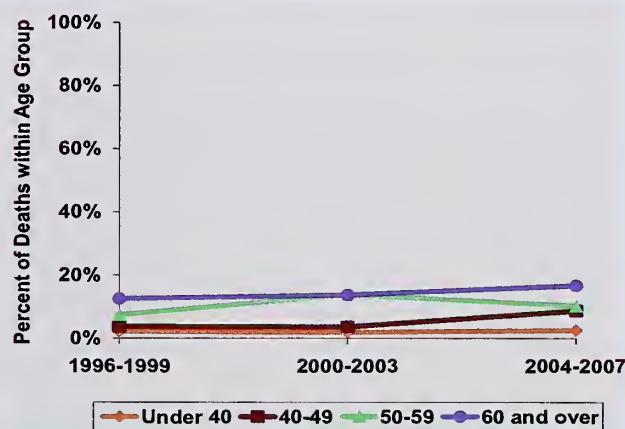
Figures 5.2 demonstrate the trends over time for specific causes of death by age group. From 1996-1999 to 2004-2007, HIV/AIDS has caused a decreasing proportion of deaths among all age groups. Conversely, deaths caused by non-AIDS-related cancer, heart disease, drug overdose, suicide, and mental disorders due to substance use have contributed to an overall increase in proportions of deaths among all age groups over time.

Figure 5.2 Trends in specific causes of death among persons with AIDS by age group, 1996-2007, San Francisco

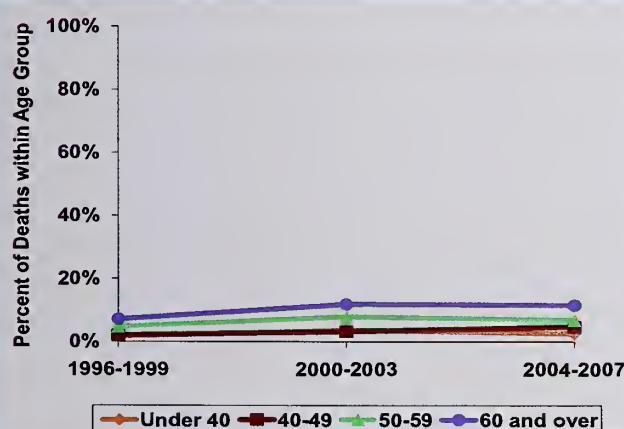
Deaths Caused by HIV/AIDS



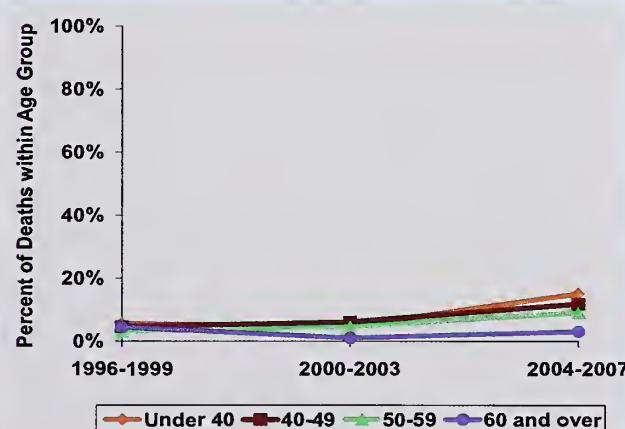
Deaths Caused by Non-AIDS Cancer



Deaths Caused by Heart Disease



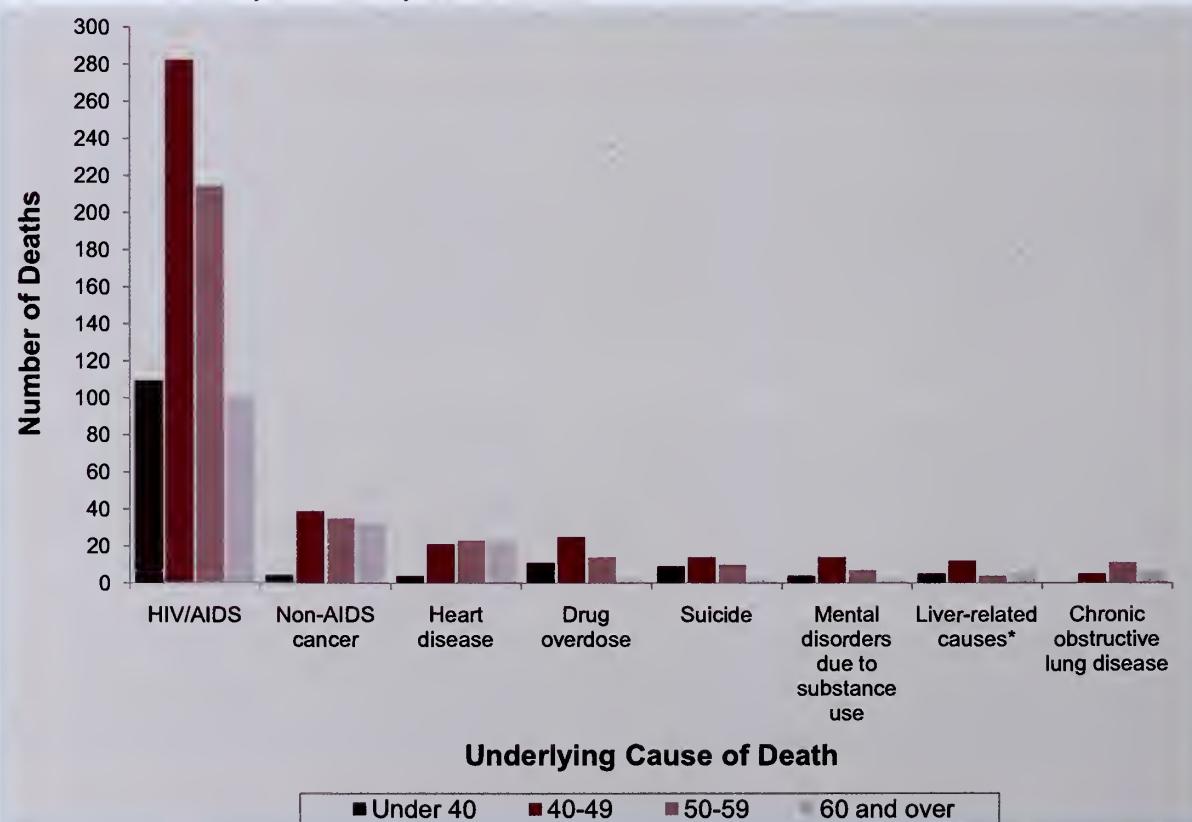
Deaths Caused by Drug Overdose, Suicide, and Mental Disorders due to Substance Use



Trends in HIV/AIDS Mortality

Figure 5.3 shows the age distribution for the leading underlying causes of death during the period 2004-2007. Persons aged 40-49 experienced the largest number of deaths for most causes of death, with the exception of heart disease and chronic obstructive lung disease. The vast majority of deaths due to non-AIDS-related cancer and heart disease occurred among those who were 40 years and older. The largest number of non-AIDS-related cancer deaths occurred among the 40-49 age group. Heart disease was the underlying cause of death for a similar number of persons within the 40-49, 50-59, and 60 and older age groups. Aside from HIV/AIDS, the largest number of deaths among persons under 40 years were due to drug overdose and suicide.

Figure 5.3 Age distribution for select underlying causes of death among persons with AIDS, 2004-2007, San Francisco

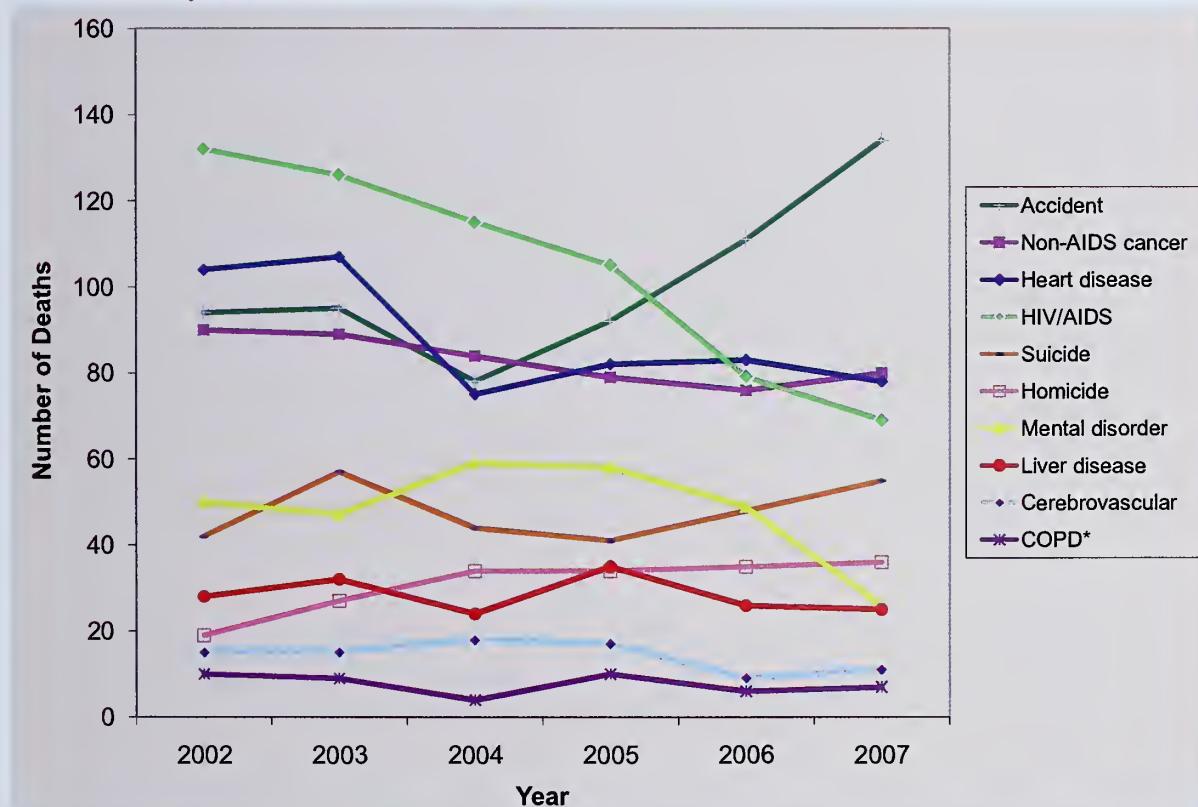


* Includes liver disease and viral hepatitis.

Vital statistics death data

We examined the data obtained from the California Vital Statistics Death Files for San Francisco residents who died from 2002 to 2007 to compare the number of deaths and death rates by gender, race/ethnicity and age. The leading cause of death was determined using ICD-10 codes representing the underlying cause of death, which is consistent with the National Vital Statistics Reports. Until 2005, HIV/AIDS had been the leading cause of death for men aged 25-54 years in San Francisco. However, accidents surpassed HIV/AIDS to become the leading cause of death in 2006 and 2007 (Figure 5.4). HIV/AIDS was the fourth leading cause of death in 2007 among male residents.

Figure 5.4 Leading causes of death among San Francisco male residents aged 25-54 years, 2002-2007

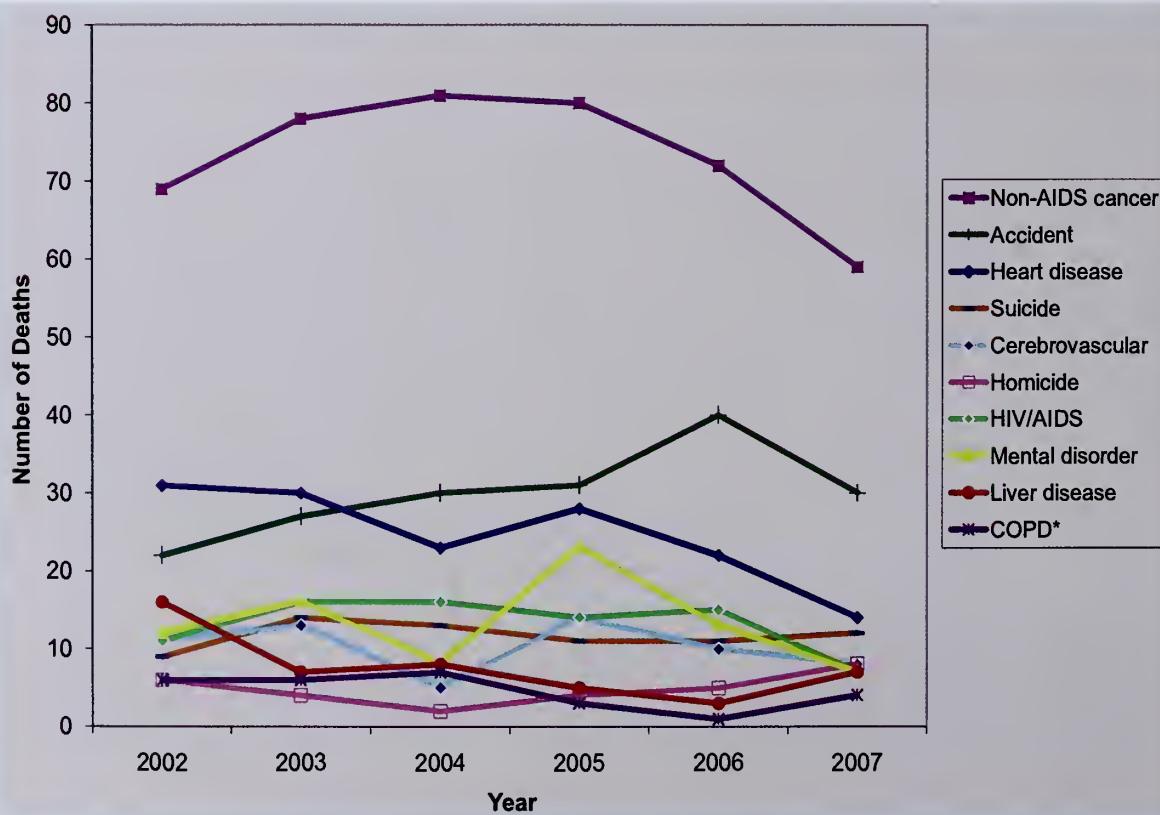


* COPD: chronic obstructive pulmonary disease.

Trends in HIV/AIDS Mortality

Deaths due to HIV/AIDS among San Francisco women were significantly lower than among their male counterparts. Among those aged 25-54 years in 2007, the number of deaths among males due to HIV/AIDS ($n=69$) was approximately ten times higher than the number of deaths among females ($n=7$). HIV/AIDS-related deaths were steady from 2002 through 2006 but decreased in 2007; this decrease brings HIV/AIDS deaths into a tie with liver disease and mental disorder as the lowest number of deaths among female residents (Figure 5.5). Non-AIDS cancer remained the leading cause of death for female residents aged 25-54 years from 2002 through 2007, with most of these deaths due to breast cancer.

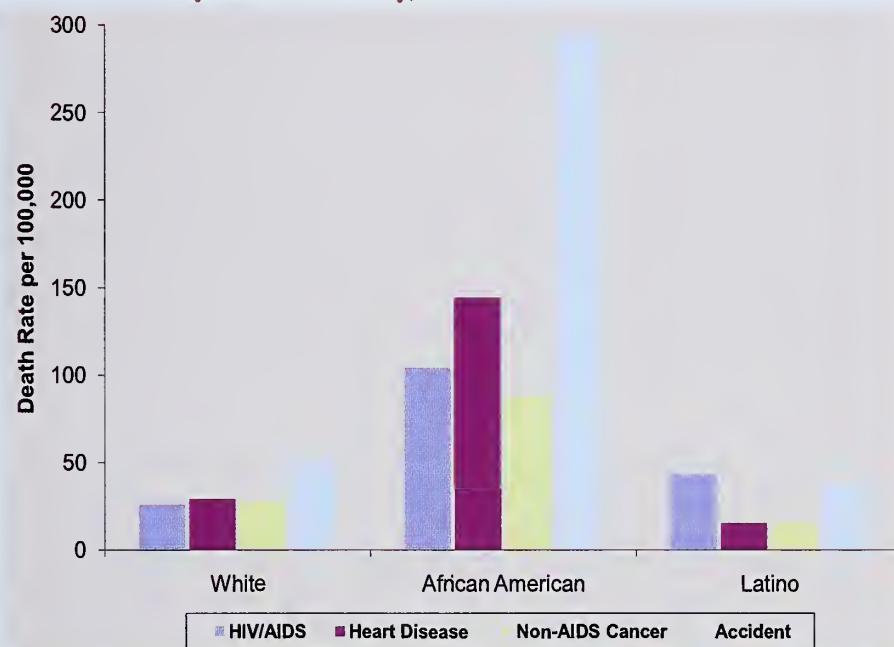
Figure 5.5 Leading causes of death among San Francisco female residents aged 25-54 years, 2002-2007



* COPD: chronic obstructive pulmonary disease.

In 2007, African American males aged 25-54 years had higher death rates from the top four leading causes of death than did Latino and white men aged 25-54 years (Figure 5.6). The greatest disparities were observed for deaths due to accidents and heart disease. The HIV/AIDS death rate for African American men (104 per 100,000) was about four times greater than the death rate among white men (26 per 100,000) and 2.5 times greater than the death rate among Latino (43 per 100,000). HIV/AIDS was the first leading cause of death among Latino men in 2007.

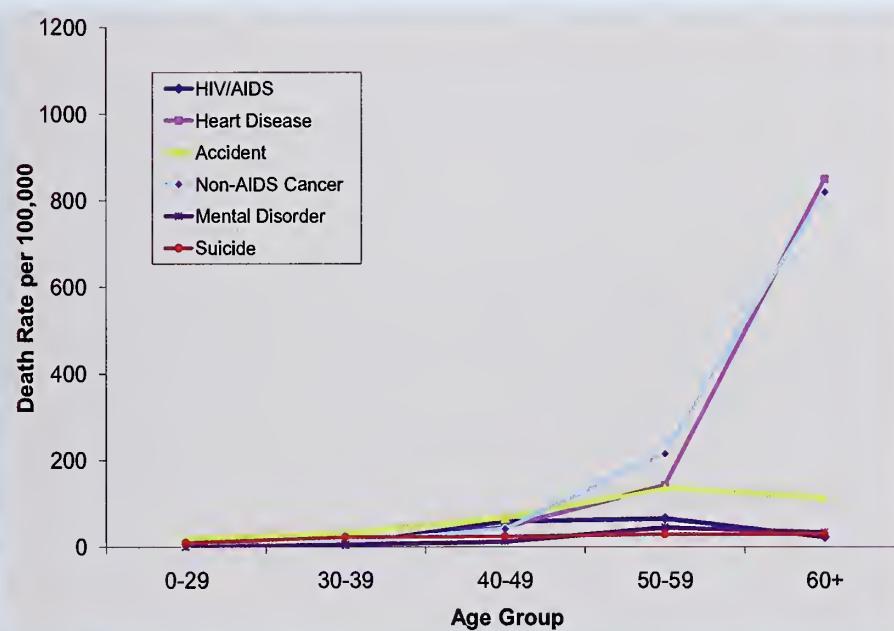
Figure 5.6 Leading causes of death rates per 100,000 population among San Francisco male residents* aged 25-54 years by race/ethnicity, 2007



* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file

Figure 5.7 illustrates the age-specific death rates among male San Francisco residents. Accidents were the leading cause of death among men under 50. The HIV/AIDS related death rate was the greatest among those aged 50-59 (65 per 100,000) followed by those aged 40-49 (58 per 100,000). Men over age 50 died at a higher rate due to chronic conditions such as heart disease and non-AIDS cancer.

Figure 5.7 Leading causes of death rates per 100,000 population among San Francisco male residents* by age group, 2007



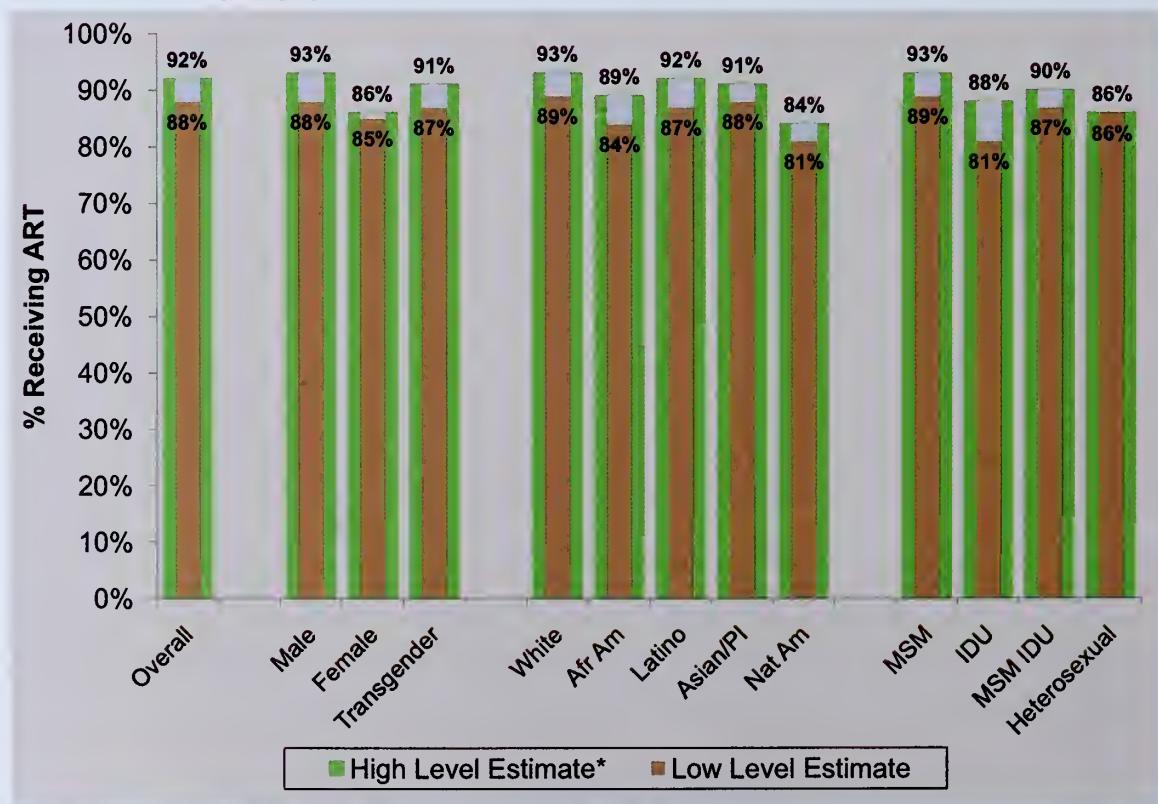
* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file.

6

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Figure 6.1 shows an estimate of antiretroviral therapy (ART) use among persons living with AIDS as of December 31, 2009. Information on ART is obtained from medical chart review and persons who have been prescribed ART are assumed to have received it. The lower percentage shown in the figure provides the crude estimate of ART use among all persons living with AIDS. The higher percentage, including the grey area, was calculated among persons who have had follow-up information within the last two years and are not known to have moved out of San Francisco. Because this calculation excludes persons who moved or who have been lost-to-follow-up (whose treatment information may be incomplete), it provides an upper level estimate of ART use. Overall, 88%-92% of persons living with AIDS received ART. ART use was lower among females, African Americans, Native Americans, and injection drug users.

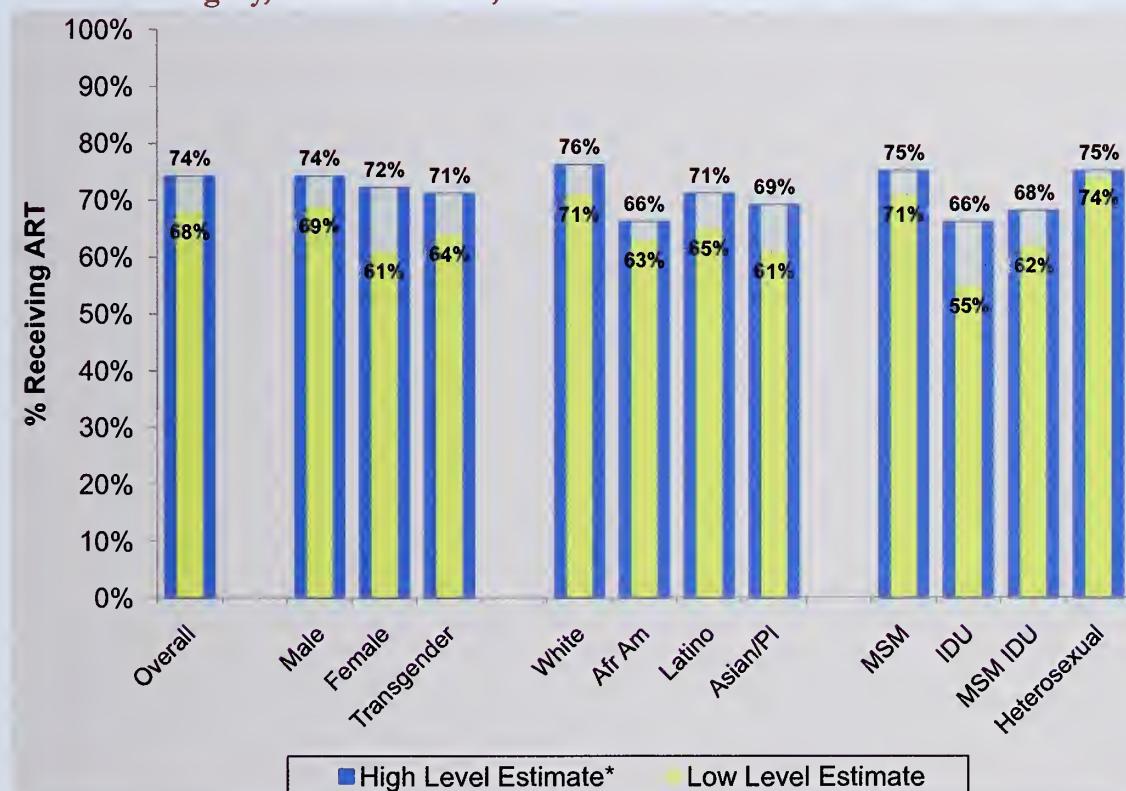
Figure 6.1 Estimate of antiretroviral therapy use among persons living with AIDS by gender, race/ethnicity, and exposure category, December 2009, San Francisco



* Top value of percentage (including the grey area) indicates the proportion of ART use after excluding persons who were lost-to-follow-up. See Technical Notes "Estimate of ART Use."

Figure 6.2 shows use of ART among persons living with HIV who have not progressed to AIDS and have a CD4 count between 200 and 350 cells/ μ L (the eligibility criteria for ART use until December 2009) at any point after their HIV diagnosis. In December 2009, the U.S. Department of Health and Human Services updated the guidelines for the use of ART to recommend that HIV infected persons start treatment when their CD4 count falls below 500 cells/ μ L. As of December 31, 2009, there were a total of 6,347 persons living with HIV non-AIDS and 90% of these had at least one CD4 count available. Among the HIV cases with a CD4 count between 200 and 350 cells/ μ L (N=2,422), 68% received ART. After excluding cases without follow-up information within the last two years, the proportion receiving ART rose to 74%. Females, transgender persons, people of color, and injection drug users were less likely to receive ART.

Figure 6.2 Estimate of antiretroviral therapy use among living HIV non-AIDS cases with a CD4 count 200-350 by gender, race/ethnicity[#], and exposure category, December 2009, San Francisco



* Top value of percentage (including the grey area) indicates the proportion of ART use after excluding persons who were lost-to-follow-up. See Technical Notes “Estimate of ART Use.”

Information for Native Americans is not shown due to small numbers.

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Recommendations regarding the optimal time point in the course of HIV infection to initiate ART have changed towards initiating sustained therapy at higher CD4 levels. We assessed ART use among persons living with HIV non-AIDS by CD4 level. HIV cases that were reported prior to April 2006 by a non-name code and without any follow-up information since then were excluded (N=721). Of the 5,625 living HIV non-AIDS cases included, 5,343 (95%) have at least one CD4 test result reported. The proportion receiving ART was greater among persons with lower CD4 counts: 68% of cases with a CD4 count between 200-350 cells/ μ L, 59% with a CD4 count between 351-500 cells/ μ L, and 46% with a CD4 count above 500 cells/ μ L received ART (Table 6.1).

We also assessed use of ART by CD4 level excluding persons who were lost-to-follow-up (i.e. without any test or follow-up information within the last two years) or those for whom the medical records were not available for review (Table 6.1, Living HIV non-AIDS cases with follow-up information). Among the 3,796 cases with follow-up information available, 74% of cases with a CD4 count between 200-350 cells/ μ L, 65% with a CD4 count between 351-500 cells/ μ L, and 53% with a CD4 count above 500 cells/ μ L received ART. Although the proportion of ART use was higher when we restricted the analysis to persons for whom follow-up data were available, the relative proportion of persons on treatment at the three levels of CD4 counts was the same; an inverse relationship between lower CD4 counts and higher proportion receiving ART was observed.

Table 6.1 Use of antiretroviral therapy* among persons living with HIV non-AIDS by CD4 level, December 2009, San Francisco

	CD4 count (cells/uL) ¹					
	200 - 350		351 - 500	> 500		
	Number	(%)	Number	(%)	Number	(%)
Living HIV non-AIDS cases²						
Received ART	1,599	(68)	985	(59)	603	(46)
Did not receive ART/Unknown	753	(32)	689	(41)	714	(54)
Total	2,352	(100)	1,674	(100)	1,317	(100)
Living HIV non-AIDS cases with follow-up information³						
Received ART	1,333	(74)	777	(65)	414	(53)
Did not receive ART/Unknown	478	(26)	420	(35)	374	(47)
Total	1,811	(100)	1,197	(100)	788	(100)

* See Technical Notes "Estimate of ART Use."

1. CD4 count reflects the lowest count the person ever had.

2. Excludes HIV cases reported by a non-name code prior to April 2006.

3. Excludes persons without follow-up information within last two years or for whom the medical record review was unavailable.

In order to understand the timing of treatment initiation among HIV-infected persons in relation to their CD4 level, we examined the CD4 counts for HIV patients who started ART between 2007 and 2009 (Table 6.2). We included persons for whom information regarding treatment start date and a CD4 count within six months prior to the ART initiation was available. If multiple CD4 counts prior to the treatment were available, the lowest CD4 count was selected. The mean CD4 count at ART initiation was 237, 236, and 254 cells/ μ L for persons who started ART in 2007, 2008, and 2009, respectively. The mean and median CD4 counts at time of ART initiation for persons with an AIDS diagnosis was relatively stable between 2007 and 2009. Among persons with HIV non-AIDS, the ART initiation was at a higher CD4 level and the mean and median CD4 counts increased over time. This suggests a trend towards initiating ART earlier in the course of disease.

Table 6.2 Mean and median CD4 level at time of treatment among persons with HIV/AIDS who started antiretroviral therapy in 2007-2009, San Francisco

Year of ART initiation	Persons with HIV/AIDS			Persons with AIDS			Persons with HIV non-AIDS		
	CD4 count at ART (cells/uL)			CD4 count at ART (cells/uL)			CD4 count at ART (cells/uL)		
	N	Mean	Median	N	Mean	Median	N	Mean	Median
2007	300	237	228	183	160	153	117	357	302
2008	240	236	207	170	169	163	70	399	350
2009	202	254	218	137	163	149	65	445	376

7 Insurance Status at Time of HIV/AIDS Diagnosis

The insurance status at time of AIDS diagnosis differs among men, women, and transgender persons. The proportion of men with private insurance was consistently higher than proportions of women and transgender persons with private insurance (Figure 7.1). In recent years, the proportions of male AIDS cases with private and public insurance has become more similar. For women, over 50% of AIDS cases had public insurance at diagnosis during 2004 to 2009. Compared to male and female AIDS cases, transgender AIDS cases had the highest proportion with no insurance coverage between 2004 and 2009.

For AIDS cases diagnosed between 2004 and 2009, 96% of transgenders and 87% of women were under-insured (i.e. having no insurance or public insurance), compared to 54% of men (Figure 7.2).

Figure 7.1 Trends in insurance status among persons with AIDS by gender, 2004-2009, San Francisco

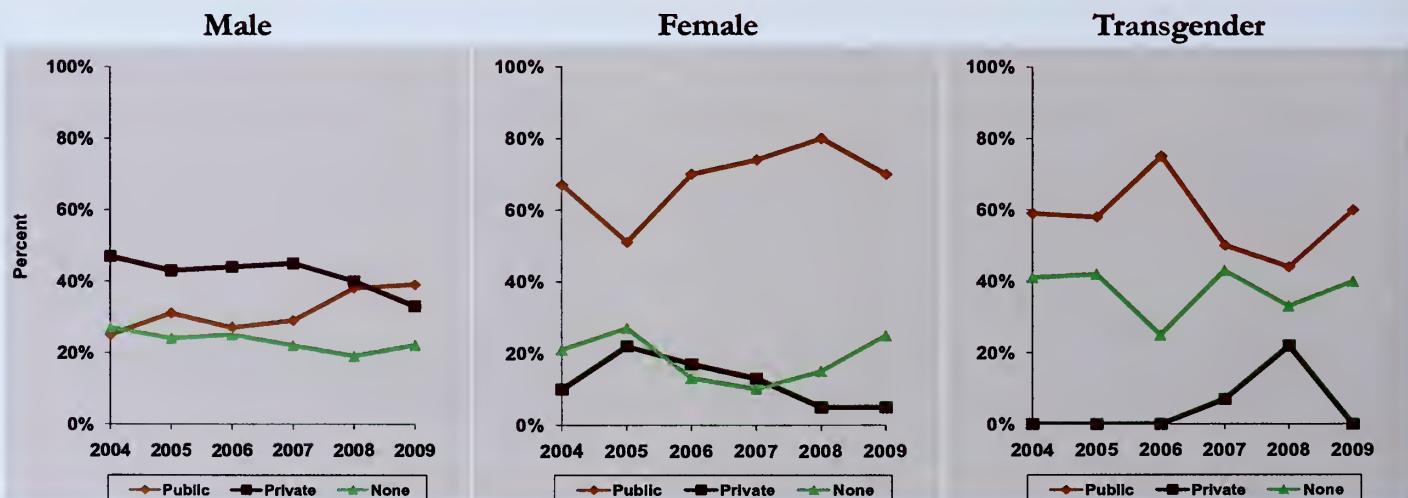
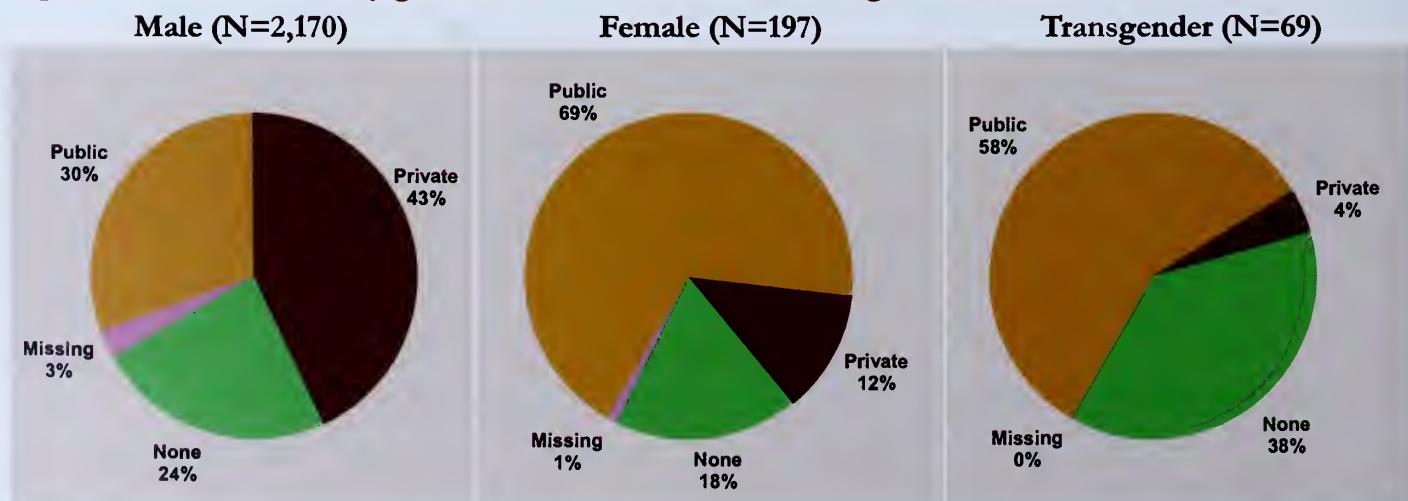


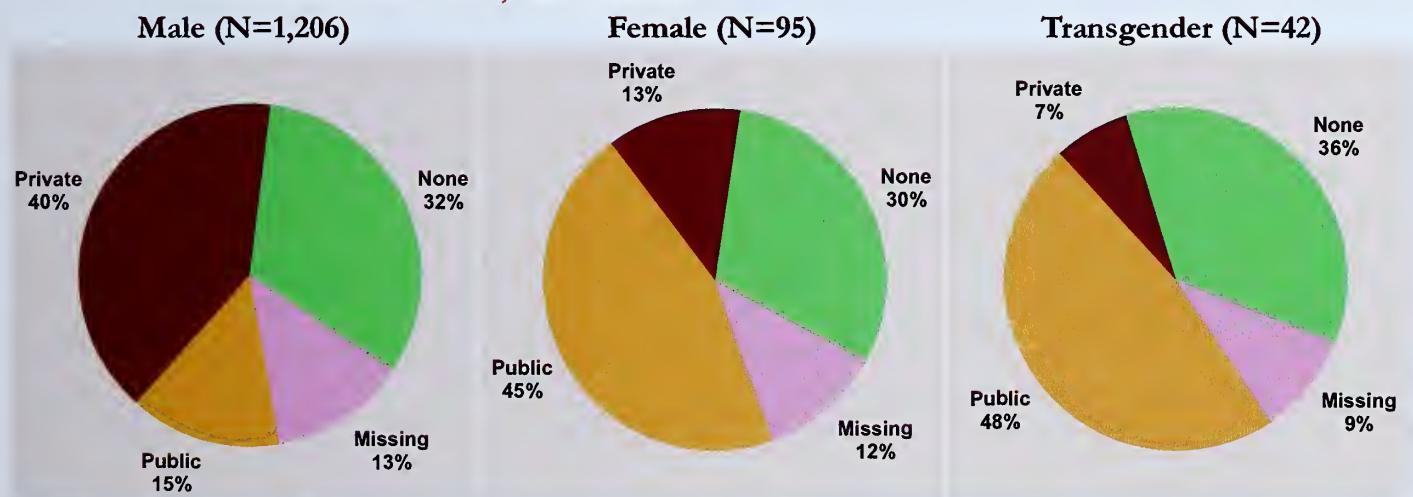
Figure 7.2 AIDS cases by gender and insurance status at diagnosis, 2004-2009, San Francisco



We examined the insurance status for persons with HIV infection who had not progressed to AIDS (HIV non-AIDS) reported between 2006 and 2009, which includes cases diagnosed before and during this time period. Compared to AIDS cases (Figure 7.2), a higher proportion of HIV non-AIDS cases had private insurance at the time of HIV diagnosis (Figure 7.3). In addition, a greater percentage of HIV non-AIDS cases did not have insurance status available. HIV non-AIDS cases whose follow-up information could not be obtained from the health care providers are recorded as missing insurance status.

Similar to AIDS cases, there were differences in insurance status by gender for HIV non-AIDS cases. Forty-seven percent of male HIV non-AIDS cases were under-insured, compared to 75% of female and 84% of transgender HIV non-AIDS cases (Figure 7.3).

Figure 7.3 HIV non-AIDS cases by gender and insurance status at diagnosis, diagnosed with HIV between 2006 and 2009, San Francisco

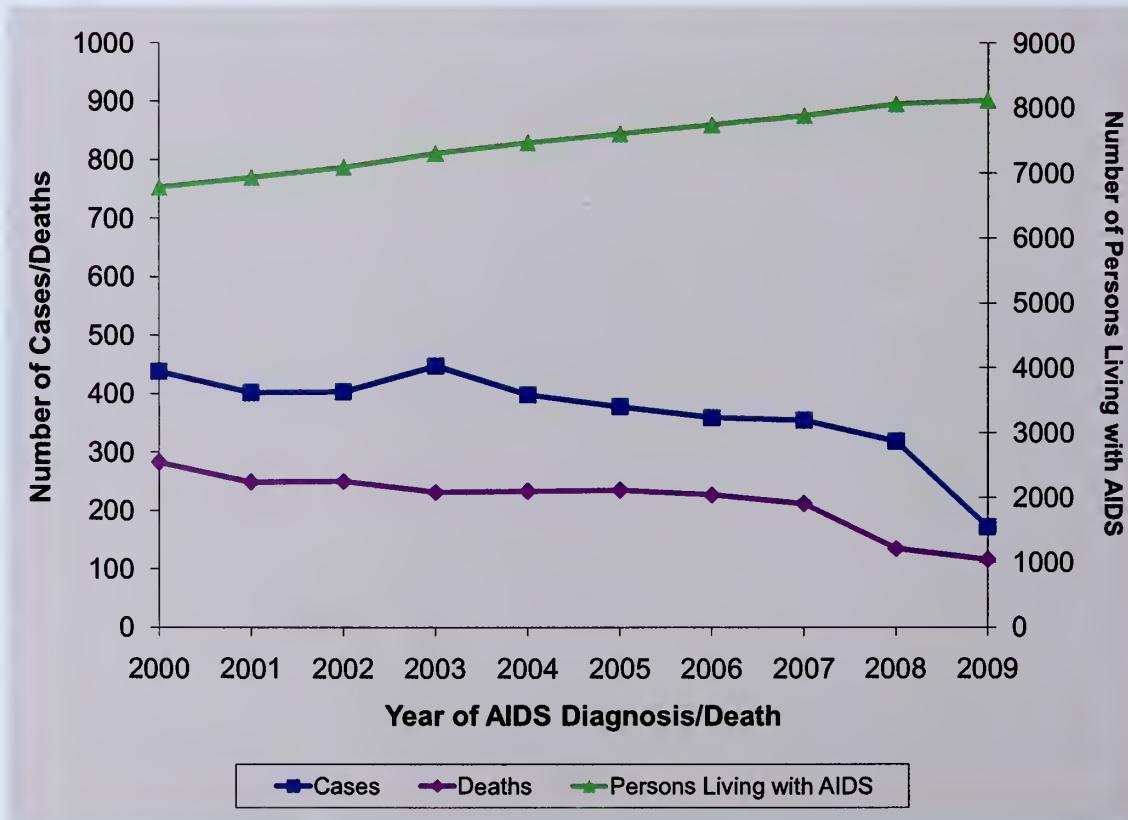


8 HIV/AIDS among Men Who Have Sex with Men

HIV/AIDS surveillance data

Over the last decade, the number of new AIDS cases and AIDS deaths declined among MSM while the number of MSM living with AIDS increased. Between 2003 and 2005, deaths among MSM were stable (Figure 8.1). In 2009, there were 8,118 MSM living with AIDS in San Francisco.

Figure 8.1 AIDS cases, deaths, and prevalence among MSM*, 2000-2009, San Francisco

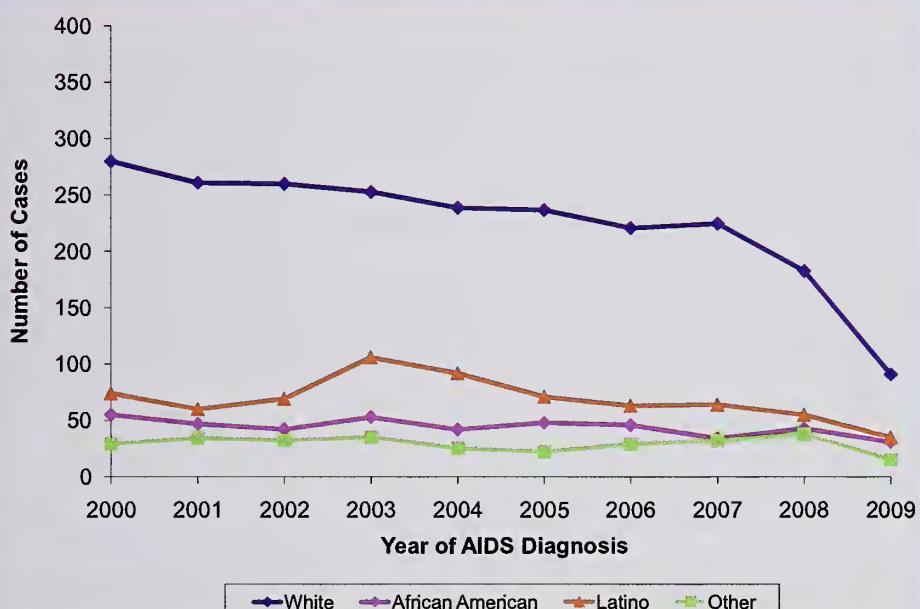


* Includes MSM and MSM IDU.

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The majority of San Francisco's MSM AIDS cases are white (Figure 8.2). Latinos are the second highest affected race/ethnicity group among MSM AIDS cases. In 2009 there were 91 white MSM, 35 Latino MSM, and 31 African American MSM diagnosed with AIDS in San Francisco.

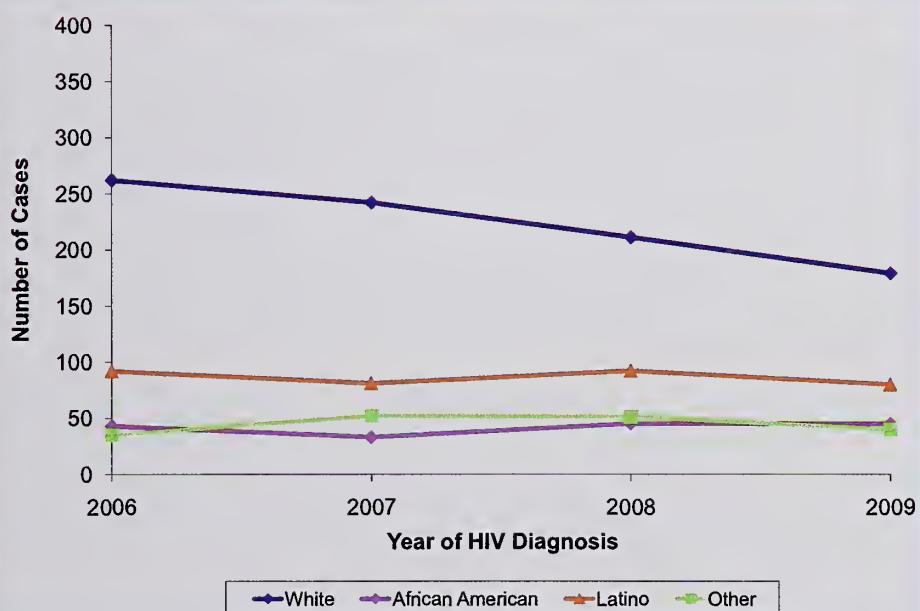
Figure 8.2 AIDS cases among MSM* by race/ethnicity, 2000-2009, San Francisco



* Includes MSM and MSM IDU.

Persons who are white make up the largest race/ethnicity group of San Francisco's MSM cases diagnosed with HIV infection (Figure 8.3). Trends of cases diagnosed with HIV infection between 2006 and 2009 indicate that there is a decline among white MSM, while the number of cases for other race/ethnicity groups was fairly stable.

Figure 8.3 Cases diagnosed with HIV infection* among MSM by race/ethnicity, 2006-2009, San Francisco



* Includes MSM and MSM IDU with HIV/AIDS by year of their initial HIV diagnosis.

HIV/AIDS among Men Who Have Sex with Men

HIV sexual behavior data

The STOP AIDS Project collects information on sexual behaviors and self-reported HIV status of men who have sex with men who participate in their outreach prevention activities in San Francisco. These data are collected anonymously and shared with the San Francisco Department of Public Health to track trends in HIV-related risk behavior. Such data may not be representative of all MSM in San Francisco. In this section, trends in unprotected anal intercourse (UAI) in the past six months is assessed for men 18 years and older who reside in San Francisco.

Figure 8.4 shows trends in reported UAI (either insertive or receptive) by self-reported HIV serostatus. Between 2006 to 2009, the percent among HIV-negative MSM who reported UAI declined slightly from 42% to 33%. Among HIV-positive men, the percent UAI fluctuated between 45% to 60%.

Figure 8.5 shows the percent of MSM who reported UAI with potentially HIV discordant partners, a measure that gauges the potential for HIV transmission by excluding sex between men known to be the same HIV status. A potentially discordant partnership is defined as partner whose HIV status is different than the respondent or is unknown. Since 2006, insertive UAI between HIV-positive men and their discordant partners appears to be stable, ranging from 15% in 2006 to 12% in 2009. Similarly, the percent of HIV-negative men who reported receptive UAI with a potentially discordant partner appears to be stable at just under 5%.

Figure 8.4 Percent of MSM reporting unprotected anal intercourse in the last six months by self-reported HIV status, the STOP AIDS Project, 2006-2009, San Francisco

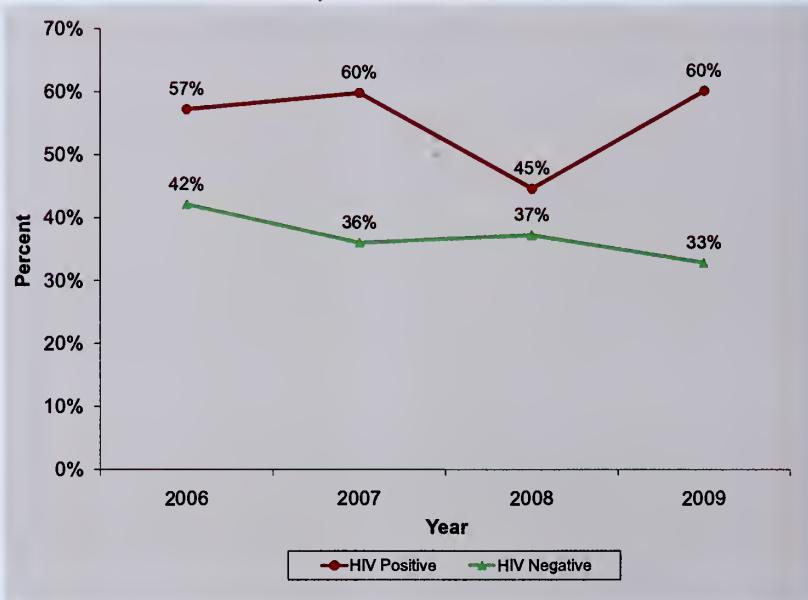
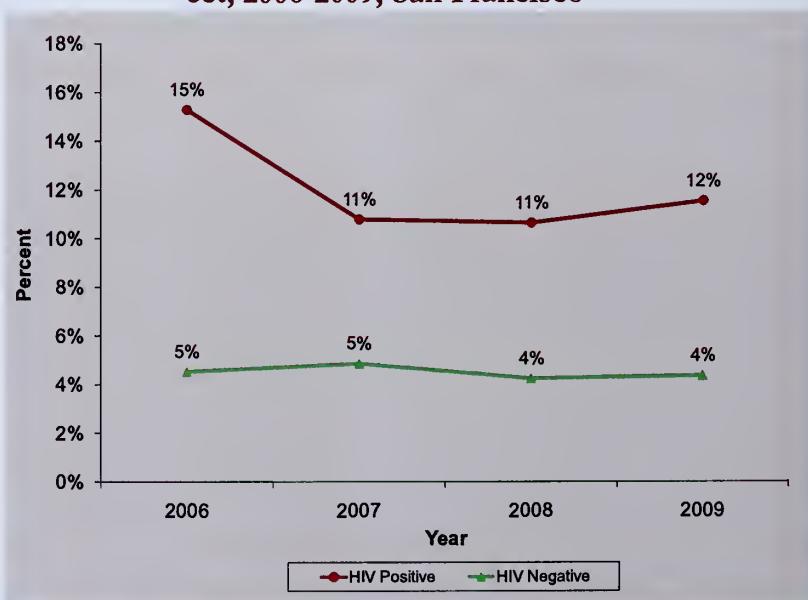


Figure 8.5 Percent of San Francisco MSM reporting unprotected anal intercourse in the last six months with potentially HIV discordant partners by self-reported HIV status, the STOP AIDS Project, 2006-2009, San Francisco



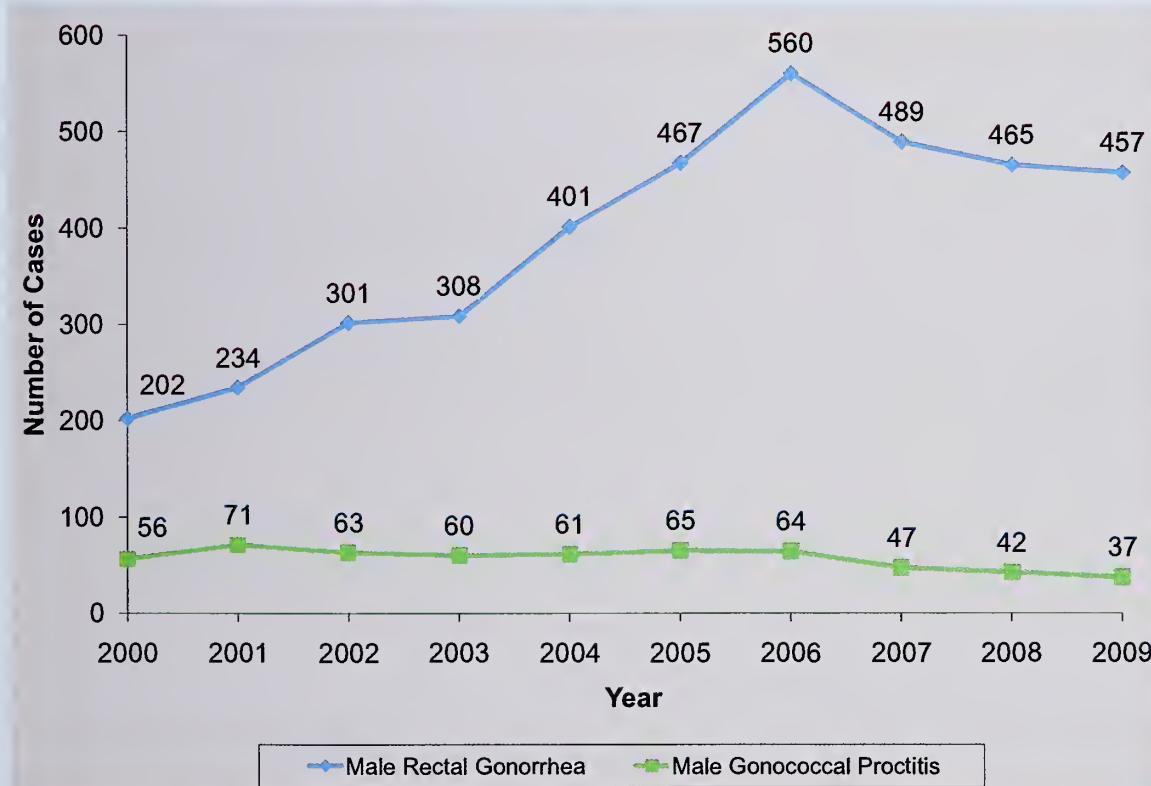
Sexually transmitted diseases among MSM

Figure 8.6 shows trends in male rectal gonorrhea and male gonococcal proctitis in San Francisco from 2000 through 2009. Data on male rectal gonorrhea originate from case reporting from laboratories and health providers throughout the city. Data on male gonococcal proctitis originate from the municipal STD clinic only. Infection with gonorrhea is a biological marker for high risk sexual behavior. Among men, rectal gonorrhea is a marker for unprotected receptive anal sex.

The last decade has seen a steady increase in reported cases of male rectal gonorrhea followed by a decrease after 2006. Male gonococcal proctitis are cases with symptomatic infection. Data on male gonococcal proctitis suggest that some of the increase in reported male rectal gonorrhea may be due to increased screening or reporting.

Data may underestimate true levels of infections due to several factors, including lack of rectal screening by many health providers, under reporting, delayed reporting, and a large proportion of cases that do not manifest symptoms.

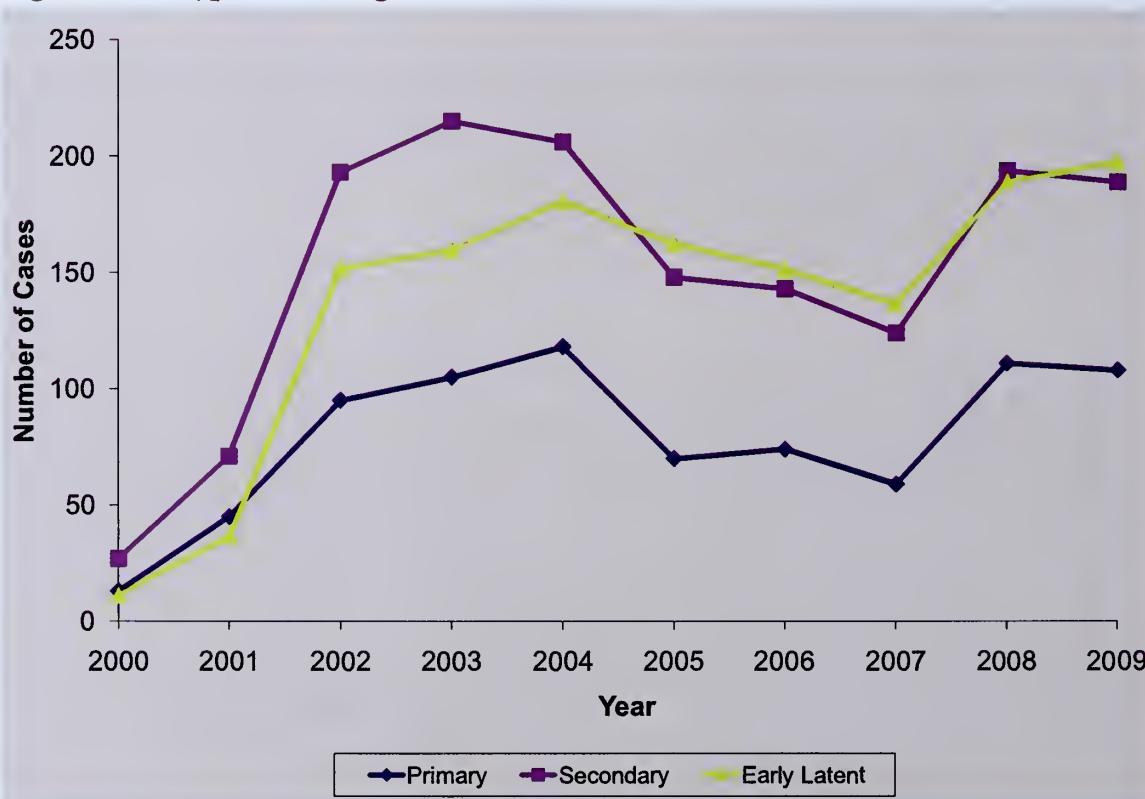
Figure 8.6 Male rectal gonorrhea and male gonococcal proctitis among MSM, 2000-2009, San Francisco



HIV/AIDS among Men Who Have Sex with Men

Figure 8.7 shows trends in primary, secondary, and early latent cases of syphilis among MSM in San Francisco from 2000 through 2009. Data originate from case reporting from laboratories and health providers throughout the city although the majority are patients seen at the municipal STD clinic. Like gonorrhea, syphilis is a biological marker for high risk sexual behavior. The increase in early syphilis among MSM in San Francisco since 2000 is dramatic. In 2005, for the first time since this rapid rise, early syphilis among MSM declined. However, in 2008, primary, secondary and early syphilis among MSM began to rise again.

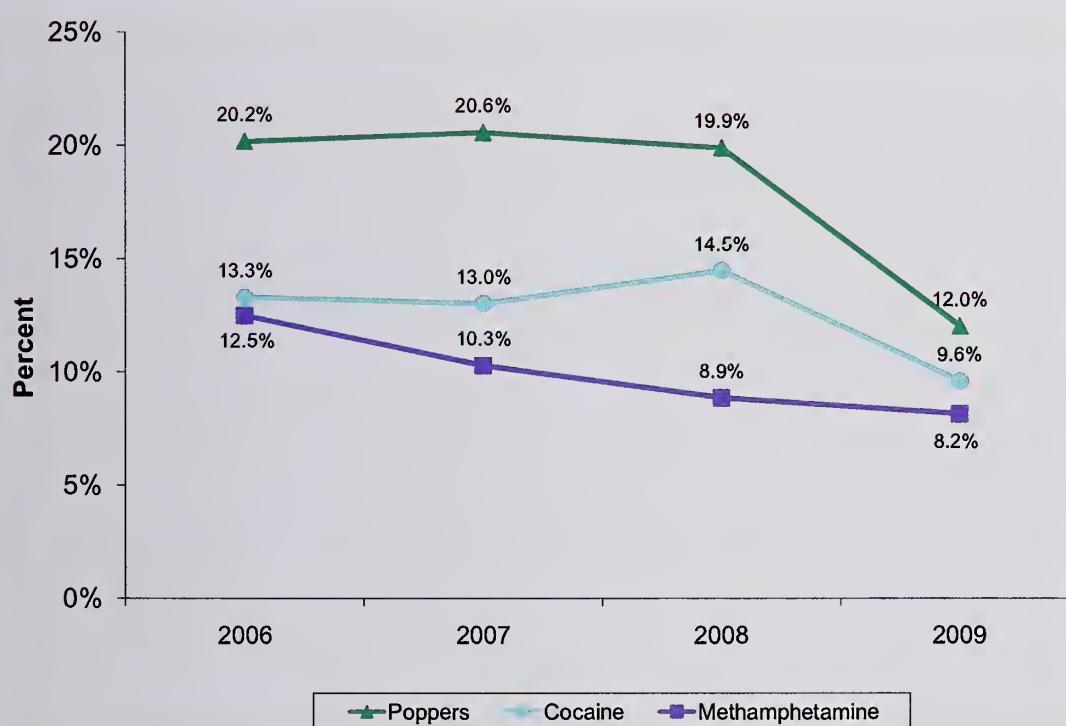
Figure 8.7 Syphilis among MSM, 2000-2009, San Francisco



Substance use

The STOP AIDS Project also records substance use among San Francisco MSM. Figure 8.8 shows the percent that used methamphetamines, “poppers,” or cocaine in the past six months. The percent reporting popper use dropped significantly from 20% in 2008 to just over 12% in 2009. Cocaine use also dropped sharply in 2009. Methamphetamine use is declining.

Figure 8.8 Substance use among MSM, the STOP AIDS Project, 2006-2009, San Francisco



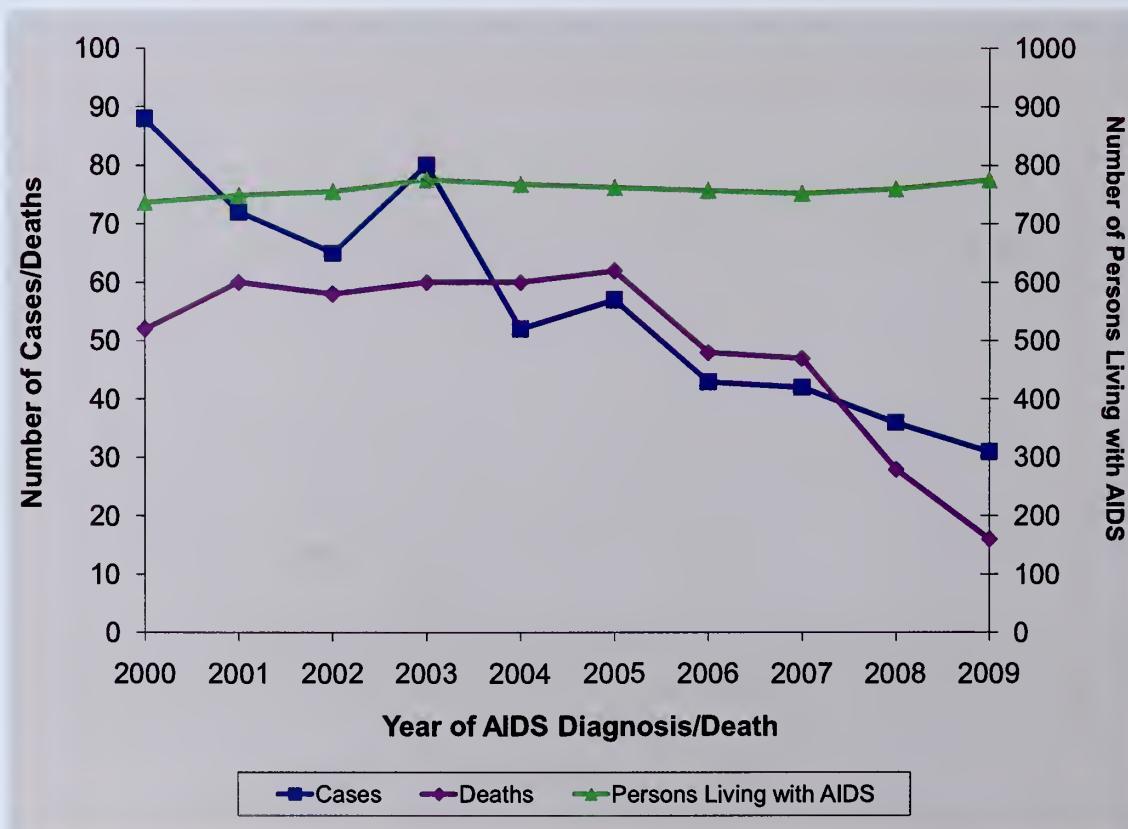
9

HIV/AIDS among Injection Drug Users

HIV/AIDS surveillance data

Injection drug use by non-MSM is the third most frequent exposure group among cumulative AIDS cases in San Francisco. This differs from national AIDS data where non-MSM IDU is the second most frequent exposure group among all cases. The number of living non-MSM IDU in San Francisco has been fairly level from 2003 to 2009 (Figure 9.1). This is the likely result of similar numbers of deaths and new AIDS cases in recent years. As of December 31, 2009, there were 775 non-MSM IDU living with AIDS in San Francisco.

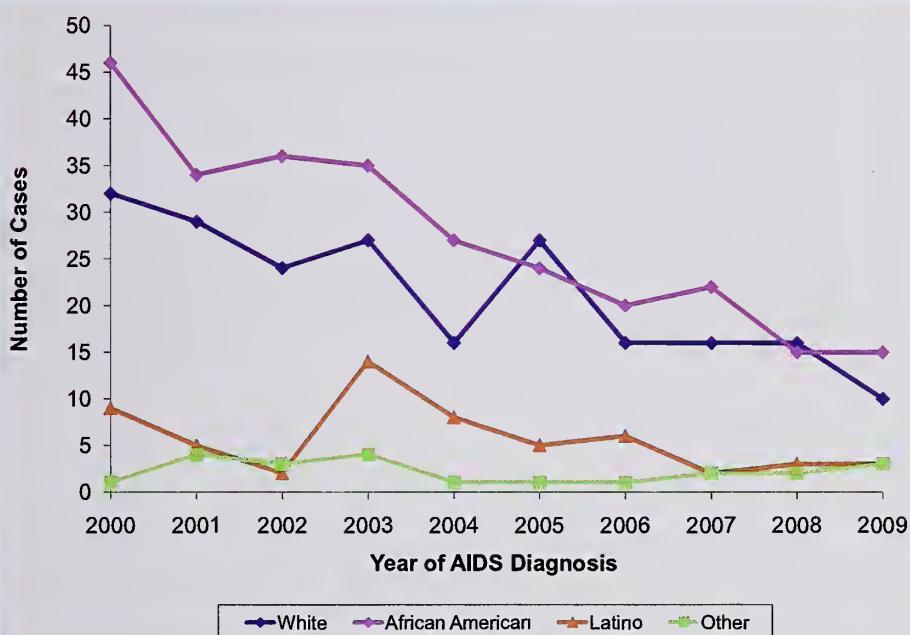
Figure 9.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 2000-2009, San Francisco



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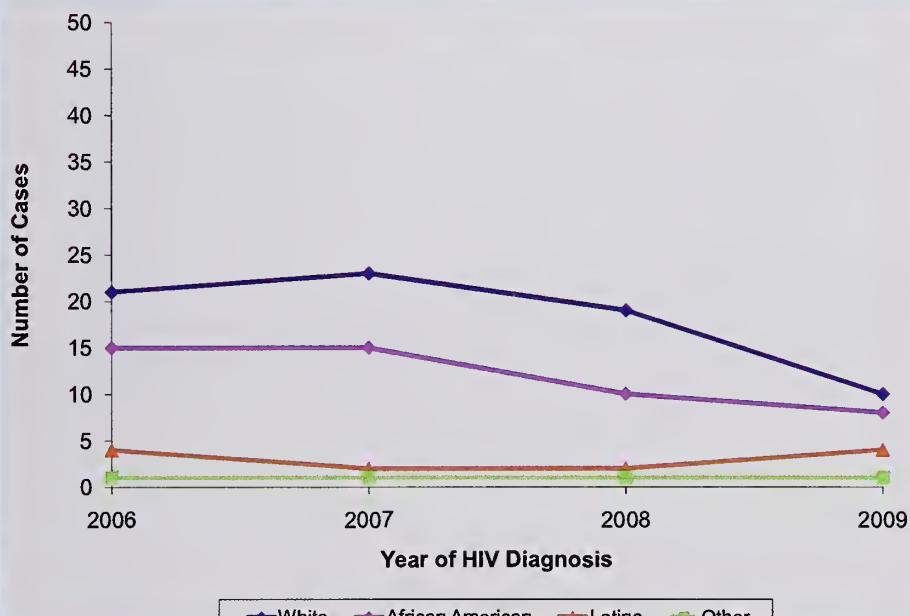
From 2000 to 2004, African Americans accounted for the greatest number of AIDS cases among non-MSM IDU (Figure 9.2). Since 2005, the number of white non-MSM IDU AIDS cases has been similar to the number of African American non-MSM IDU. Non-MSM IDU who were Latino or of other race/ethnicity groups accounted for few AIDS cases between 2000 and 2009.

Figure 9.2 AIDS cases among non-MSM IDU by race/ethnicity, 2000-2009, San Francisco



Examined by year of HIV diagnosis, among non-MSM IDU, whites accounted for the greatest number of cases diagnosed with HIV infection (Figure 9.3). Since 2006, the numbers of white and African American non-MSM IDU cases diagnosed with HIV infection have declined while the numbers for other race/ethnicity groups remained stable.

Figure 9.3 Cases diagnosed with HIV infection* among non-MSM IDU by race/ethnicity, 2006-2009, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

HIV/AIDS among Injection Drug Users

Table 9.1 shows the risk and race/ethnicity distributions of AIDS cases that were directly or indirectly associated with injection drug use. MSM IDU account for 65% of all IDU-associated AIDS cases, followed by male heterosexual IDU who account for 21%. Whites make up the largest proportion of MSM IDU and Lesbian IDU, while African Americans account for the largest proportion of IDU-associated AIDS cases in all other exposure categories.

Table 9.1 Injection drug use-associated AIDS cases by exposure category and race/ethnicity, diagnosed through December 2009, San Francisco

Exposure Category	Race/Ethnicity Distribution by Percent				
	Total Number	White	African American	Latino	Other
Male heterosexual IDU	1,406	36%	48%	12%	3%
Female heterosexual IDU	696	32%	52%	11%	5%
MSM IDU	4,272	70%	16%	11%	4%
Lesbian IDU	60	45%	37%	10%	8%
Heterosexual contact with IDU	153	32%	44%	16%	8%
Children whose mothers are IDUs or mother's sex partners are IDUs	23	22%	43%	17%	17%

National HIV Behavioral Surveillance data

As part of the National HIV Behavioral Surveillance (NHBS), we conducted a survey of IDU using respondent driven sampling (RDS). Eligible IDU were referred by their peers, were over 18 years old and had injected in the past 12 months. In addition to a behavioral survey, participating IDU were tested for HIV antibodies. After adjusting for the sampling method, HIV prevalence among IDU in San Francisco was 12.2% (95% Confidence Interval 8.2-16.5).

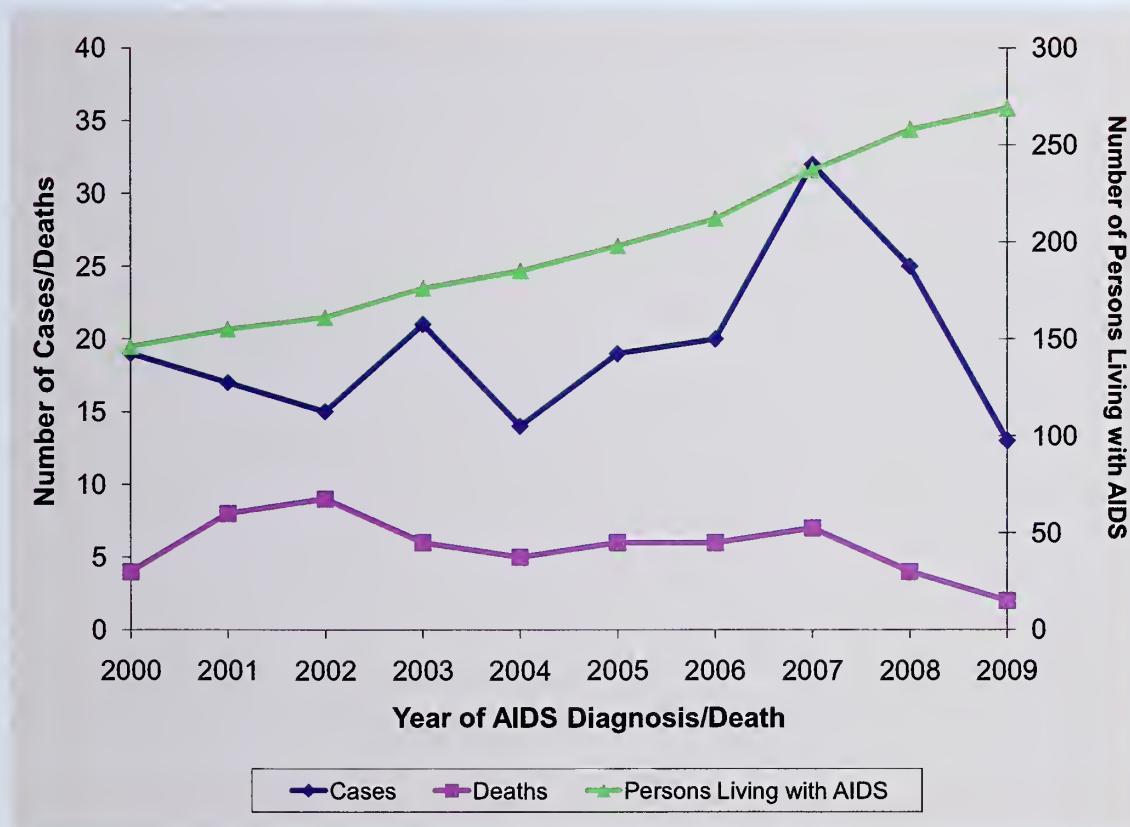
10

HIV/AIDS among Heterosexuals

HIV/AIDS surveillance data

Between 2000 and 2006 the number of AIDS cases among persons who were infected with HIV through heterosexual contact was fairly level (Figure 10.1). The number of AIDS cases in non-IDU heterosexuals peaked in 2007 at 32 cases and declined to 13 in 2009. However, cases in 2008 and 2009 may be underestimated due to the delay in reporting new AIDS cases. Deaths among non-IDU heterosexuals have been stable during the last decade. The number of non-IDU heterosexuals living with AIDS increased to 269 by December 31, 2009.

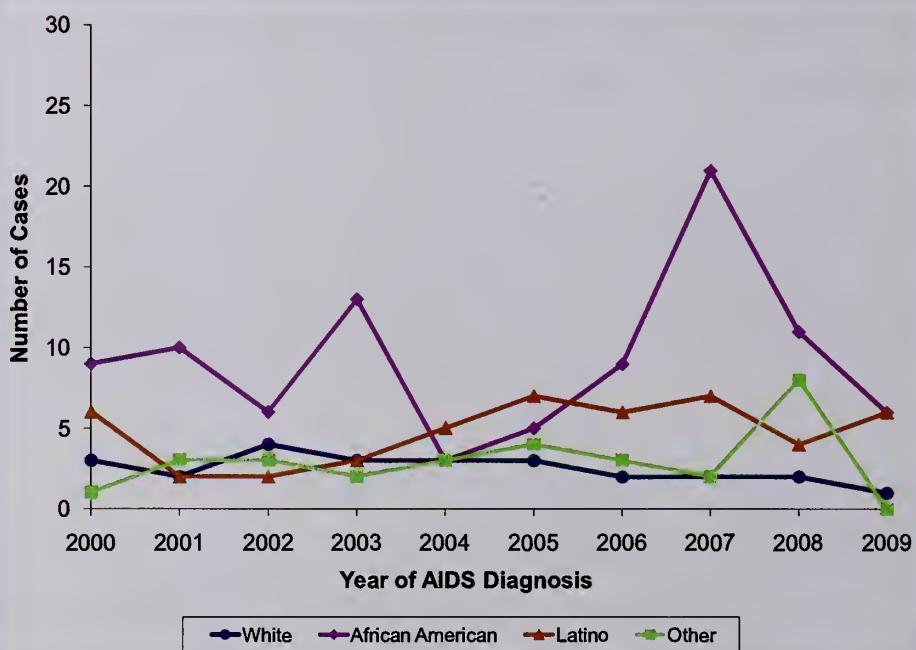
Figure 10.1 AIDS cases, deaths, and prevalence among heterosexuals, 2000-2009, San Francisco



HIV/AIDS among Heterosexuals

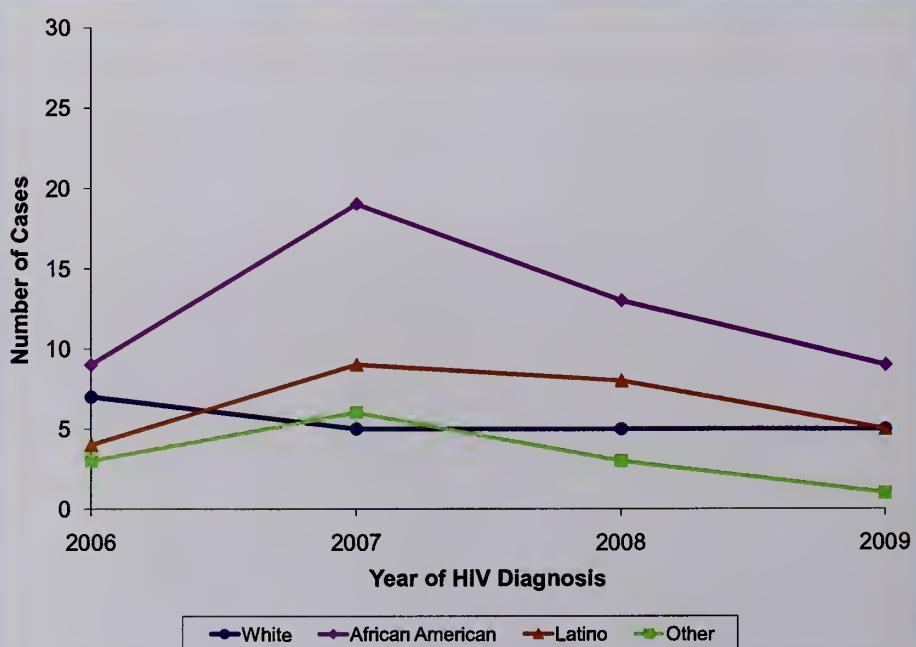
Trends in heterosexual AIDS cases by race/ethnicity are difficult to characterize due to the small number of cases (Figure 10.2). Overall, African Americans accounted for the greatest number of heterosexual AIDS cases since 2000. The number of African American heterosexual AIDS cases diagnosed per year increased steadily from 2004 to 2007, accounting for two-thirds of heterosexual AIDS cases diagnosed in 2007.

Figure 10.2 AIDS cases among heterosexuals by race/ethnicity, 2000-2009, San Francisco



Similar to the trend for heterosexual AIDS cases by race/ethnicity, African American is the most prevalent race/ethnicity among heterosexual cases diagnosed with HIV infection (Figure 10.3). During the time period of 2006 to 2009, African Americans made up 45% of diagnosed heterosexual cases.

Figure 10.3 Cases diagnosed with HIV infection* among heterosexuals by race/ethnicity, 2006-2009, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

The majority of heterosexually-acquired AIDS cases occurred in women (Table 10.1). Sex with an HIV-infected partner of unknown risk factor was the most frequent exposure category for both men and women, accounting for 72% of men exposed heterosexually and 46% of women exposed heterosexually.

Table 10.1 AIDS cases among heterosexuals by exposure category and gender, diagnosed through December 2009, San Francisco

Exposure Category	Men		Women	
	Number	%	Number	%
Sex with injection drug user	37	26%	116	38%
Sex with bisexual men	N/A	N/A	47	15%
Sex with HIV+ transfusion recipient	<5	–	<5	–
Sex with HIV+ persons of unknown risk	101	72%	140	46%

HIV/AIDS among Heterosexuals

Sexually transmitted diseases among heterosexuals

Figure 10.4 shows the annual number of primary, secondary, and early latent cases of syphilis among heterosexual men in San Francisco from 2000 through 2009. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Compared to MSM, syphilis among heterosexual men remains relatively low in recent years but with an increase in 2008.

Figure 10.4 Syphilis among heterosexual men, 2000-2009, San Francisco

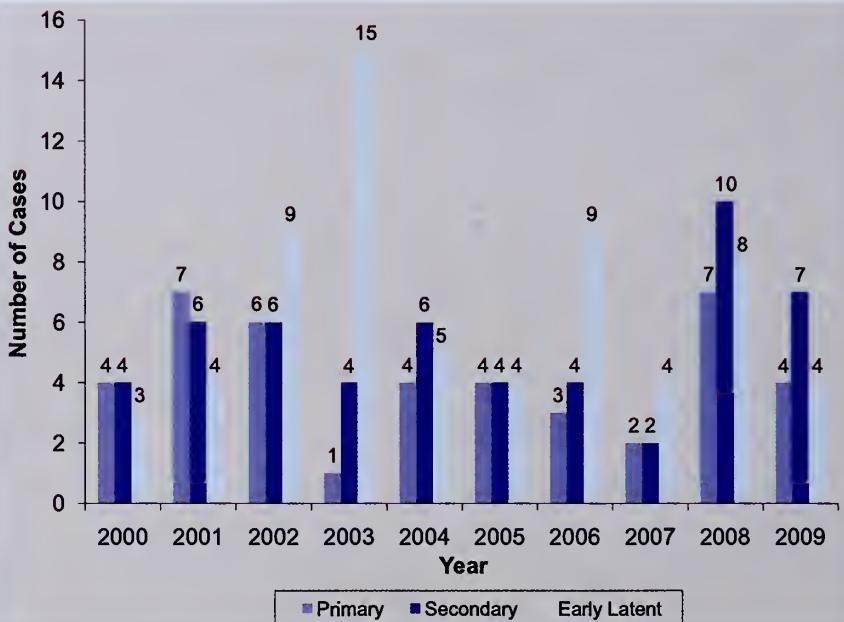
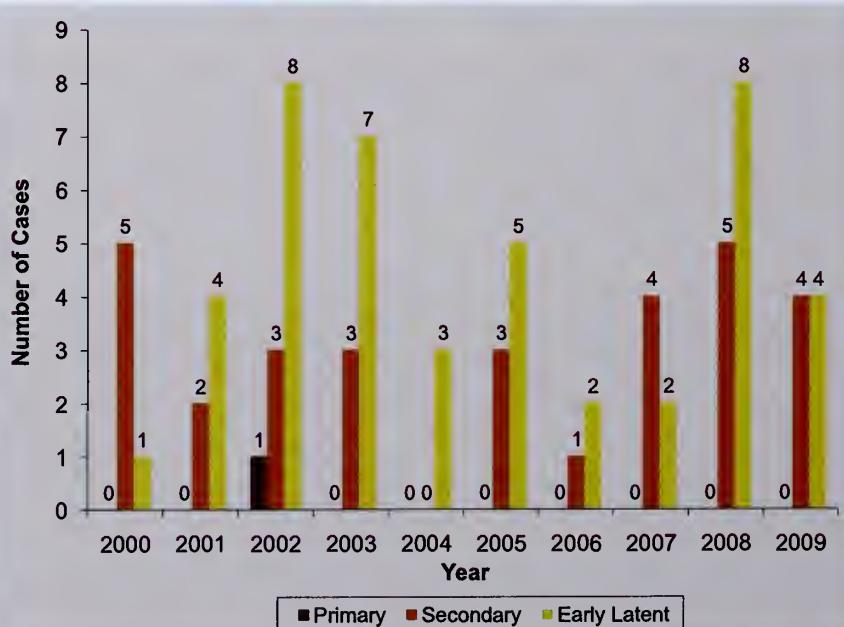


Figure 10.5 shows the annual number of primary, secondary, and early latent cases of syphilis among women in San Francisco from 2000 through 2009. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Among women, syphilis cases have been low and stable in recent years, with an increase in 2008 in secondary and early latent syphilis cases.

Figure 10.5 Syphilis among women, 2000-2009, San Francisco

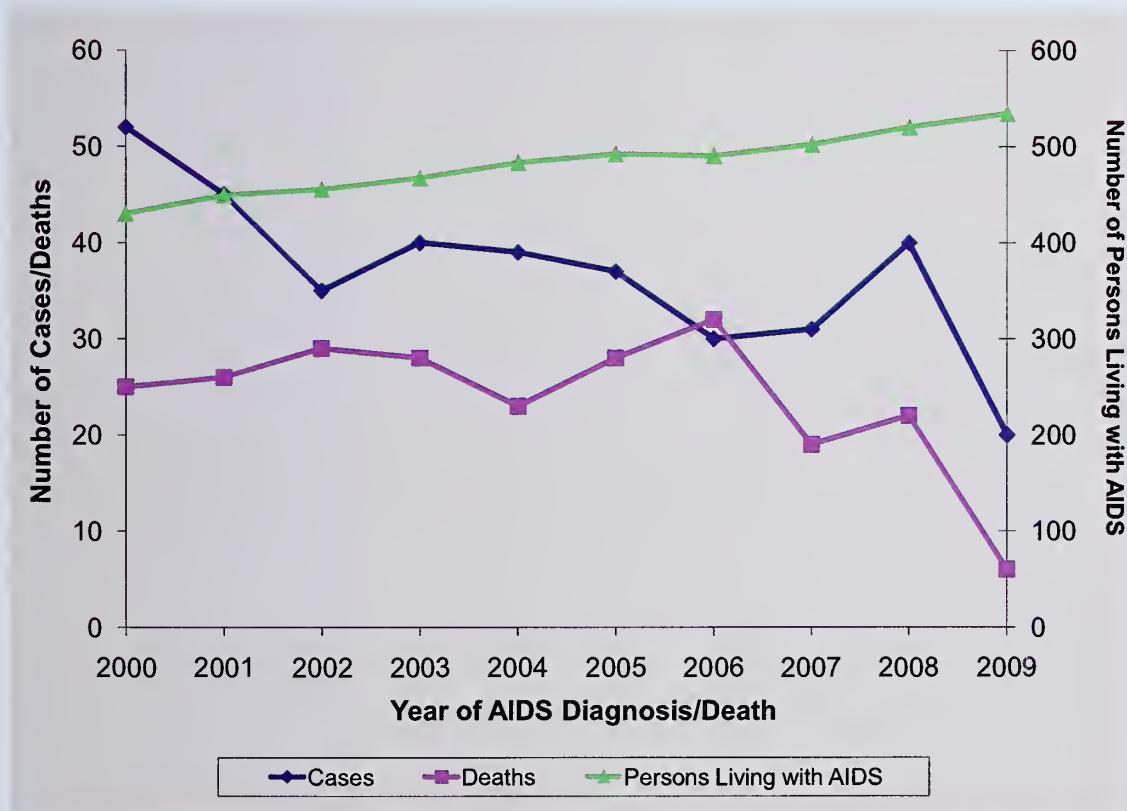


11

HIV/AIDS among Women

AIDS cases among women in San Francisco declined from 2000 to 2006 and increased from 2006 to 2008 (Figure 11.1). The number of AIDS cases in recent years may be underestimated due to a delay in case reporting. The number of deaths remained fairly stable from 2000 to 2004. As of December 31, 2009 there were 534 women living with AIDS.

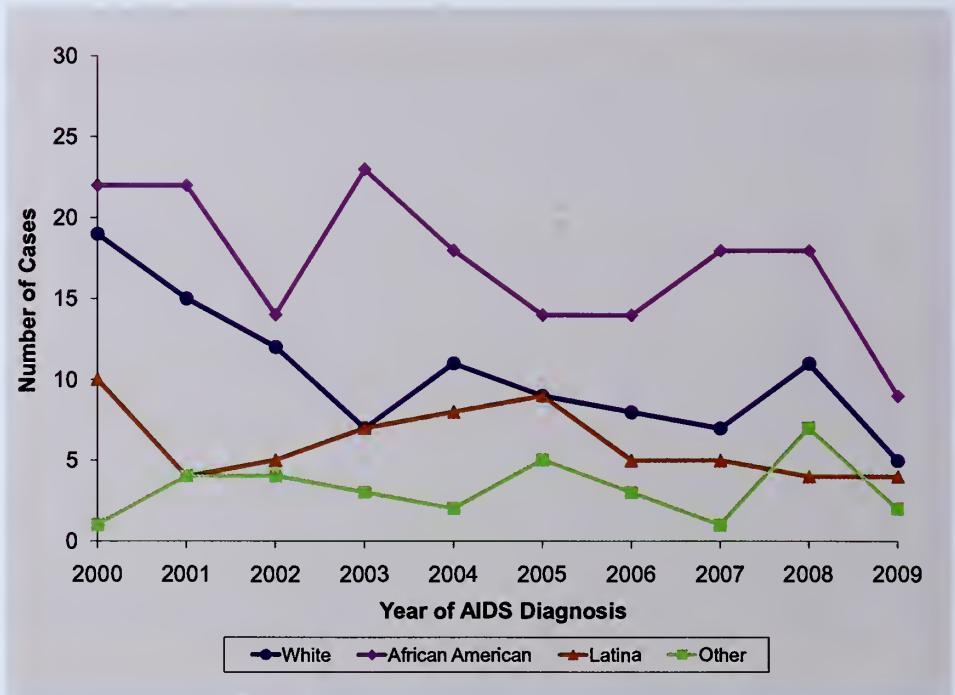
Figure 11.1 AIDS cases, deaths, and prevalence among women, 2000-2009, San Francisco



HIV/AIDS among Women

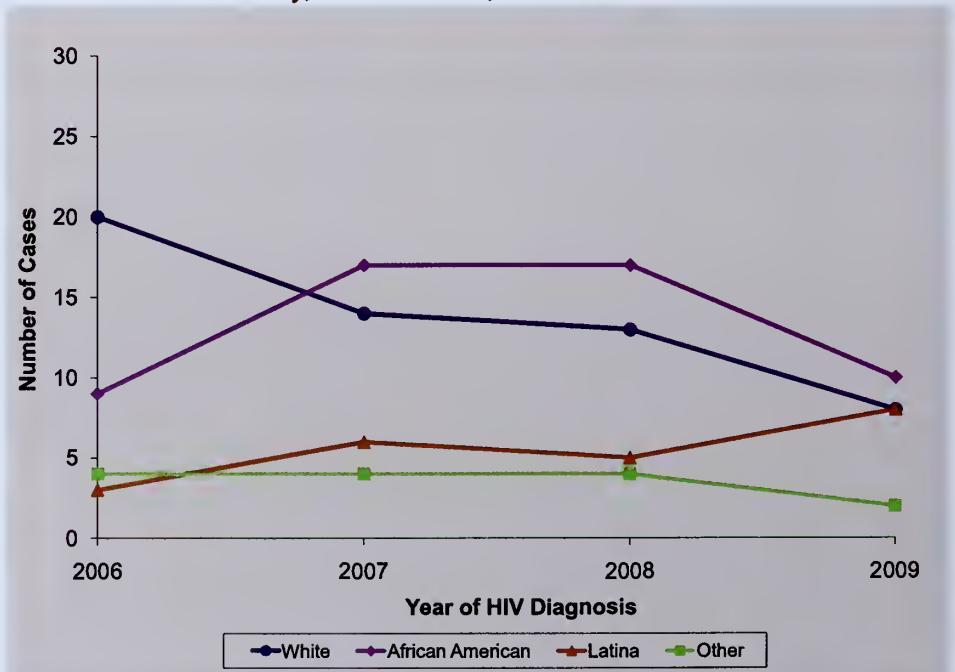
During 2000 to 2009, African American women represented the highest number of newly diagnosed female AIDS cases, and white women represented the second highest number of female AIDS cases (Figure 11.2).

Figure 11.2 Female AIDS cases by race/ethnicity, 2000 to 2009, San Francisco



African American and white are the two largest race/ethnicity groups among women diagnosed with HIV infection (Figure 11.3). From 2006 to 2009, African Americans and whites accounted for 37% and 38% of female cases diagnosed with HIV infection, respectively. Numbers of Latina and women of other race/ethnicity groups were low in that time period, however, Latina cases diagnosed with HIV infection show an increase beginning in 2009.

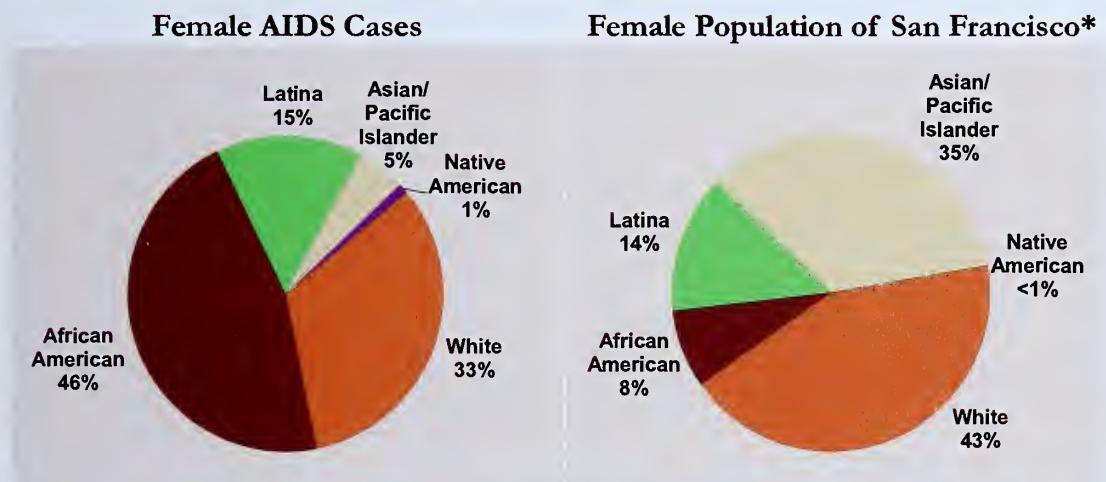
Figure 11.3 Female cases diagnosed with HIV infection* by race/ethnicity, 2006 to 2009, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Compared to the female population of San Francisco, African Americans are disproportionately affected among women diagnosed with AIDS (Figure 11.4). Although African American women represent 8% of the female population, they account for 46% of the female AIDS cases in San Francisco.

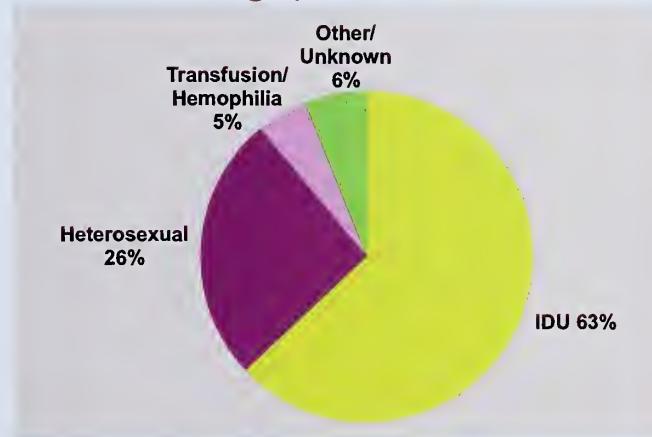
Figure 11.4 Female AIDS cases diagnosed through December 2009 and female population by race/ethnicity, San Francisco



* United States 2000 Census data.

Almost two-thirds of all female AIDS cases diagnosed in San Francisco acquired HIV infection through injection drug use (Figure 11.5). More than a quarter of all female AIDS cases in San Francisco acquired HIV infection through heterosexual contact.

Figure 11.5 Female AIDS cases diagnosed through December 2009 by exposure category, San Francisco



12 HIV/AIDS among Adolescents and Young Adults

Table 12.1 shows living HIV/AIDS cases diagnosed in San Francisco that were adolescents (age 13-19) and young adults (age 20-24) as of December 31, 2009. There were 25 adolescents and 165 young adults living with HIV/AIDS. Among living adolescent HIV/AIDS cases, the majority were infected with HIV perinatally. Latinos accounted for the highest proportion of living adolescent cases, while the proportions of white and African American living adolescent cases were the same. Among living young adult HIV/AIDS cases, the majority were MSM, and African Americans and Latinos made up the similar proportions of living young adult cases, at 30% and 31% respectively.

Table 12.1 Living adolescent and young adult HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2009, San Francisco

	13-19 Years Old (N=25)	20-24 Years Old (N=165)
Exposure Category		
MSM	16%	65%
IDU	0%	3%
MSM IDU	8%	8%
Heterosexual	0%	7%
Perinatal	72%	10%
Other/Unidentified	4%	7%
Gender		
Male	48%	83%
Female	52%	12%
Transgender	0%	5%
Race/Ethnicity		
White	20%	27%
African American	20%	30%
Latino	44%	31%
Asian/Pacific Islander	8%	8%
Other/Unknown	8%	4%

Table 12.2 compares cases diagnosed with HIV infection among San Francisco adolescents and young adults with adolescents and young adults diagnosed nationally. Numbers of cases for the U.S. were reported using HIV/AIDS surveillance data from the 37 states with confidential name-based HIV reporting. Compared with national adolescent and young adult HIV/AIDS cases, San Francisco had a lower percentage of adolescent (13-19 years) cases.

Table 12.2 Cases diagnosed with HIV infection* among adolescents and young adults, 2006-2009, San Francisco and the United States

	Year of HIV Diagnosis			
	2006 Number (%)	2007 Number (%)	2008 Number (%)	2009 Number (%)
San Francisco HIV/AIDS Cases				
Age 13-19 years at HIV diagnosis	6 (11)	9 (17)	9 (19)	4 (7)
Age 20-24 years at HIV diagnosis	49 (89)	44 (83)	38 (81)	50 (93)
Total	55 (100)	53 (100)	47 (100)	54 (100)
U.S. HIV/AIDS Cases				
Age 13-19 years at HIV diagnosis	1,364 (26)	1,553 (27)	1,585 (26)	N/A
Age 20-24 years at HIV diagnosis	3,937 (74)	4,241 (73)	4,499 (74)	N/A
Total	5,301 (100)	5,794 (100)	6,084 (100)	N/A

* Includes persons with HIV/AIDS by year of their initial HIV diagnosis. U.S. data are based on reported case counts from the 37 states with confidential name-based HIV reporting in CDC HIV Surveillance Report, 2008.

13 HIV/AIDS among Children

HIV/AIDS surveillance data

As of December 31, 2009, a cumulative total of 38 pediatric AIDS cases (less than 13 years old and resided in San Francisco at time of diagnosis) had been reported. There were 15 pediatric HIV non-AIDS cases reported between 2002 and 2009. Of these pediatric HIV/AIDS cases, 29 were known to be alive as of December 2009, with many surviving beyond childhood. The majority of living pediatric HIV/AIDS cases acquired infection from a high-risk or AIDS-diagnosed mother (Table 13.1). Sixty-two percent are female and 93% are children of color.

Table 13.1 Living pediatric HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2009, San Francisco

		N= 29
Exposure Category		
Perinatal		90%
Other/Unidentified		10%
Gender		
Male		38%
Female		62%
Race/Ethnicity		
White		7%
African American		31%
Latino		34%
Asian/Pacific Islander		14%
Other/Multirace		14%

Perinatal HIV data

Data on children with HIV in San Francisco are gathered through the Pediatric Spectrum of Disease (PSD) project. The PSD project was established in 1989 by the Centers for Disease Control and Prevention and collects data from eight areas throughout the United States. In North California, hospital surveillance for children under 13 years old infected with HIV or infants born to infected mothers has occurred at eight pediatric hospitals (including University of California at San Francisco and San Francisco General Hospital). Records from HIV-positive pediatric patients cared for through the California Children's Services program, a state agency providing funding and case management for HIV-positive children, are also included in the PSD project. Data presented here include infants who were San Francisco residents and born to mothers documented to have HIV before delivery without a history of blood or blood product transfusion before 1985.

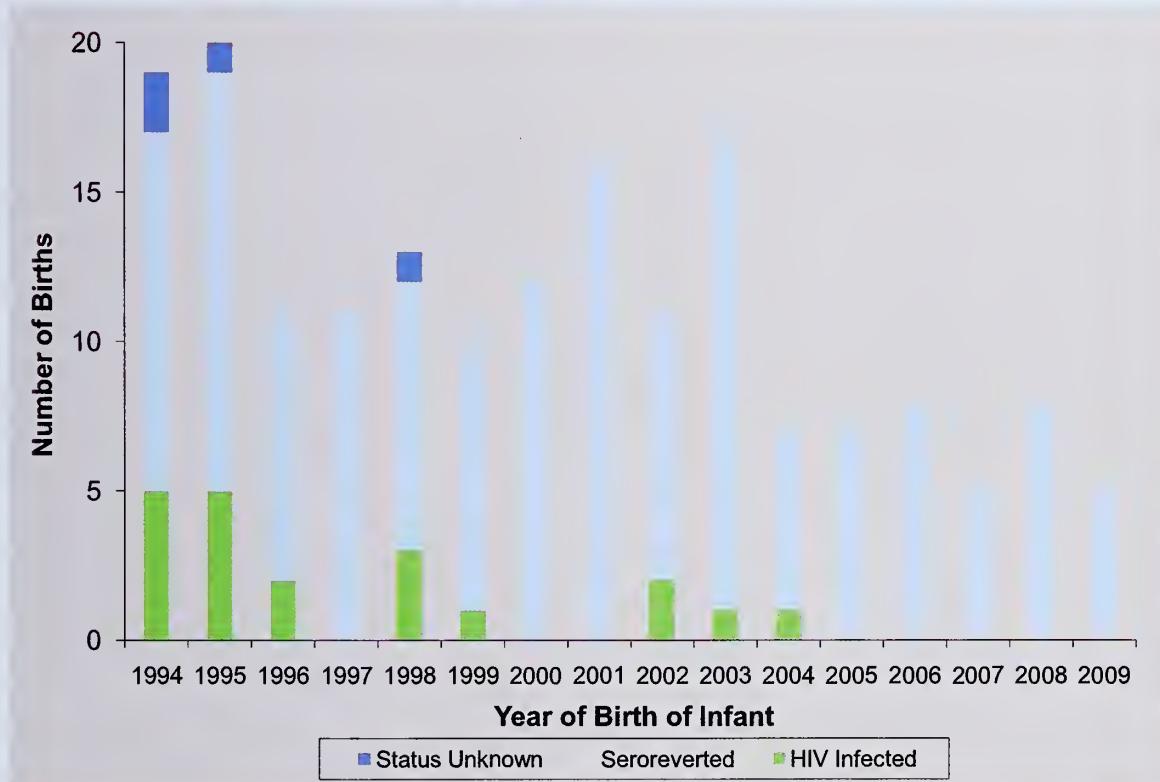
Through December 31, 2009, 337 infants were born to HIV-infected mothers who were residents of San Francisco (Table 13.2). Sixty-three (19%) of these infants were confirmed to be HIV-infected, 264 (78%) seroreverted (were determined to be uninfected after maternal antibodies disappeared), and 10 (3%) were of unknown serostatus. Forty-eight percent of perinatally exposed infants were African American, while whites and Latinos each accounted for 20% of these infants.

Table 13.2 Infants born to HIV-infected mothers by infant HIV status and race/ethnicity, December 2009, San Francisco

	N (%)
Total	337
Infant HIV Status	
HIV-infected	63 (19)
Seroreverted (HIV-negative)	264 (78)
Unknown	10 (3)
Race/Ethnicity	
White	68 (20)
African American	163 (48)
Latino	67 (20)
Asian/Pacific Islander	26 (8)
Other/Unknown	13 (4)

The number of perinatally exposed infants who were confirmed as HIV-infected has remained low since 1996 (Figure 13.1). Declines in perinatal transmission of HIV are due to the improved therapies for mothers throughout pregnancy, at delivery, and for infants to prevent perinatal transmission. In 2009, five infants born to HIV-infected mothers have been reported so far; all have seroreverted (i.e. were uninfected).

Figure 13.1 Infants born to HIV-infected mothers by year of birth and infant HIV status, 1994-2009, San Francisco

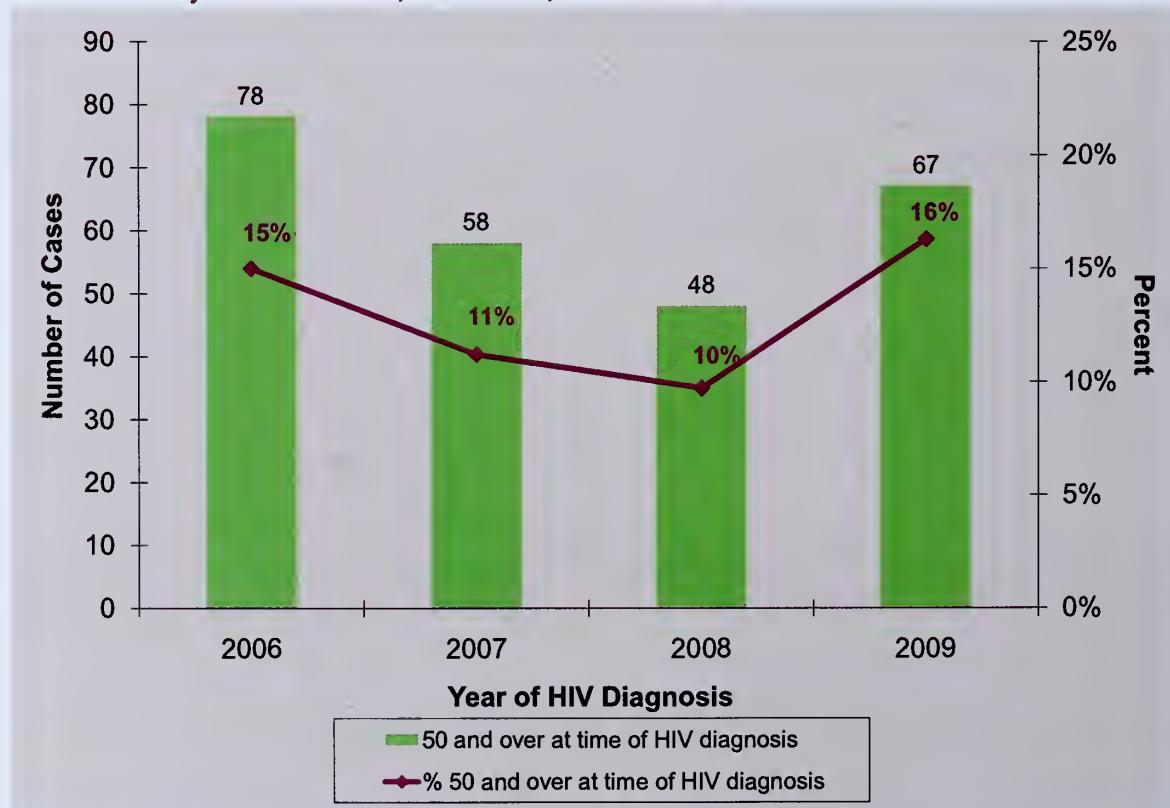


14 HIV/AIDS among the Aging Population

With the advent of highly active antiretroviral therapy (HAART), persons with HIV/AIDS are living longer; in particular, those aged 50 and older comprise an increasingly larger proportion of living cases. Between 2005 and 2009, the number of persons living with HIV/AIDS who are 50 years and older has increased from 4,323 to 6,721, and the proportion increased from 29% in 2005 to 42% in 2009. Understanding the trends and characteristics of this emerging population can assist with prevention planning and care resource allocation.

Between 2006 and 2008, the number and percent of newly diagnosed HIV cases (including persons diagnosed with HIV and AIDS concurrently) among persons aged 50 years and older decreased (Figure 14.1). In 2009, the number of cases diagnosed among those aged 50 years and older shows a noticeable increase despite the decrease in the total number of HIV cases diagnosed in that year.

Figure 14.1 Number and percent of persons diagnosed with HIV infection* at age 50 years and older, 2006-2009, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

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Persons diagnosed with HIV/AIDS at the age of 50 years and older differ across various demographics when compared to persons diagnosed under the age of 50. A larger proportion of persons diagnosed with HIV at age 50 years and older are women, white, African Americans, heterosexuals and injection drug users (Table 14.1).

Table 14.1 Characteristics of persons diagnosed with HIV infection in 2006-2009 by age at diagnosis, San Francisco

	Age ≥ 50 years (N=251)		Age < 50 years (N=1,690)	
	Number	(%)	Number	(%)
Gender				
Male	216	(86)	1,526	(90)
Female	29	(12)	115	(7)
Transgender	6	(2)	49	(3)
Race/Ethnicity				
White	148	(59)	880	(52)
African American	58	(23)	241	(14)
Latino	33	(13)	375	(22)
Other/Unknown	12	(5)	194	(12)
Exposure Category				
MSM	142	(57)	1,223	(72)
IDU	39	(16)	90	(6)
MSM IDU	27	(11)	191	(11)
Heterosexual	24	(10)	87	(5)
Other/Unidentified	19	(8)	99	(6)

The majority of persons aged 50 years and older living with HIV/AIDS are male (93%), white (70%), and MSM (75%) (Table 14.2). In general, the characteristics of persons aged 50 years and older are similar to those under 50 years old. The 50 years and older population appears more likely to be white whereas those aged under 50 have a higher proportion of Latinos.

Table 14.2 Characteristics of living HIV/AIDS cases by age group, December 31, 2009, San Francisco

	Age ≥ 50 years (N=6,721)		Age < 50 years (N=9,115)	
	Number	(%)	Number	(%)
Gender				
Male	6,248	(93)	8,327	(91)
Female	372	(6)	546	(6)
Transgender	101	(2)	242	(3)
Race/Ethnicity				
White	4,679	(70)	5,337	(59)
African American	1,037	(15)	1,149	(13)
Latino	699	(10)	1,805	(20)
Asian/Pacific Islander	212	(3)	555	(6)
Native American	25	(0)	75	(1)
Other/Unknown	69	(1)	194	(2)
Exposure Category				
MSM	5,018	(75)	6,505	(71)
IDU	598	(9)	588	(6)
MSM IDU	762	(11)	1,363	(15)
Heterosexual	152	(2)	295	(3)
Other/Unidentified	191	(3)	364	(4)

15 HIV/AIDS among Transgender Persons

Transgender status is determined through review of information in medical records. Information on transgender status has been collected since 1996. During 2006-2009, there were a total of 55 transgender persons diagnosed with HIV in San Francisco (Table 15.1). Transgender cases comprised approximately 3% of all HIV cases diagnosed in this time period. Compared to all HIV cases diagnosed in the same time period, transgender cases were more likely to be non-white, injection drug users, and younger.

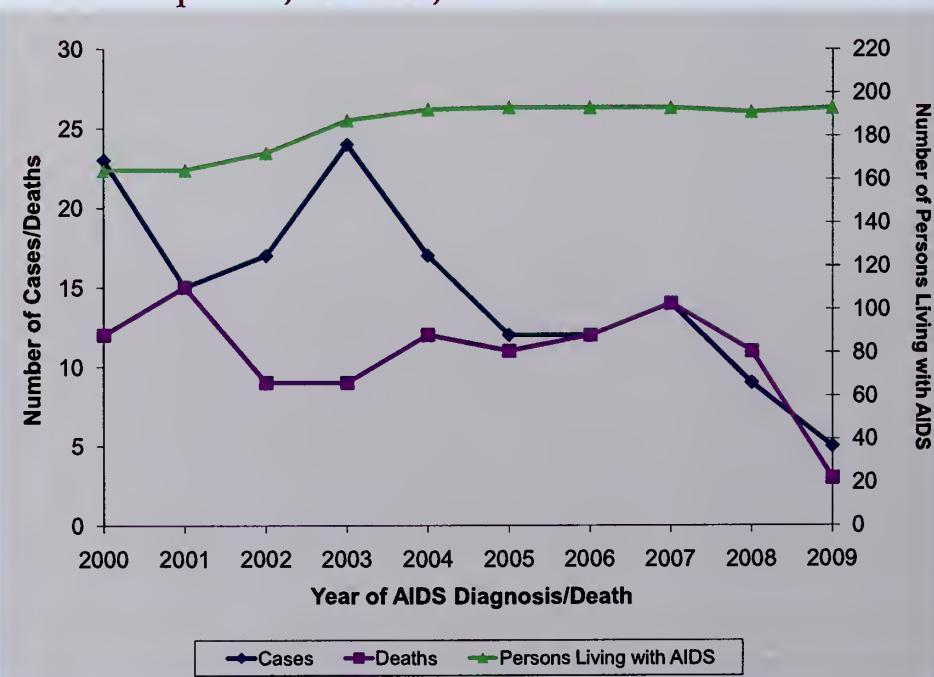
The numbers of transgender AIDS cases and deaths are small and fluctuate by year (Figure 15.1). The number of living transgender AIDS cases has leveled off since 2005. As of December 31, 2009 there were 193 living transgender AIDS cases.

Table 15.1 Characteristics of transgender* HIV cases compared to all HIV cases diagnosed in 2006-2009, San Francisco

	Transgender HIV Cases Diagnosed 2006-2009 (N=55)	HIV Cases Diagnosed 2006-2009 (N=1,941)
Race/Ethnicity		
White	25%	53%
African American	20%	15%
Latino	38%	21%
Other/Unknown	16%	11%
Injection Drug Use		
Yes	31%	18%
No	69%	82%
Age at Diagnosis (Years)		
13 - 29	44%	25%
30 - 39	29%	35%
40 - 49	16%	27%
50+	11%	13%

* See Technical Notes "Transgender Status."

Figure 15.1 AIDS cases, deaths, and prevalence among transgender persons, 2000-2009, San Francisco



16 HIV/AIDS among Homeless Persons

A case is classified as homeless if, at the time of HIV or AIDS diagnosis, the medical record states that the patient is homeless or the patient's address is one of the following: (1) a known homeless shelter, (2) a health care clinic, or (3) a free postal address not connected to a residence ('general delivery'). Cases with missing information on residence are not classified as homeless.

Figure 16.1 shows a decline in number of homeless AIDS cases diagnosed between 2000 and 2005. Since 2000, the proportion of homeless cases among all AIDS cases diagnosed per year ranged between 6% and 14%. For 2009, 11% of AIDS cases were homeless at the time of diagnosis.

Among all cases diagnosed with HIV infection, the number of homeless cases was fairly stable between 2006 to 2009, with a slight increase in 2007 (Figure 16.2). Homeless persons accounted for 8% to 10% of all cases diagnosed with HIV infection each year. For persons diagnosed in 2009, 10% of cases diagnosed with HIV infection were homeless at the time of HIV diagnosis.

Figure 16.1 Number and percent of homeless AIDS cases by year of diagnosis, 2000-2009, San Francisco

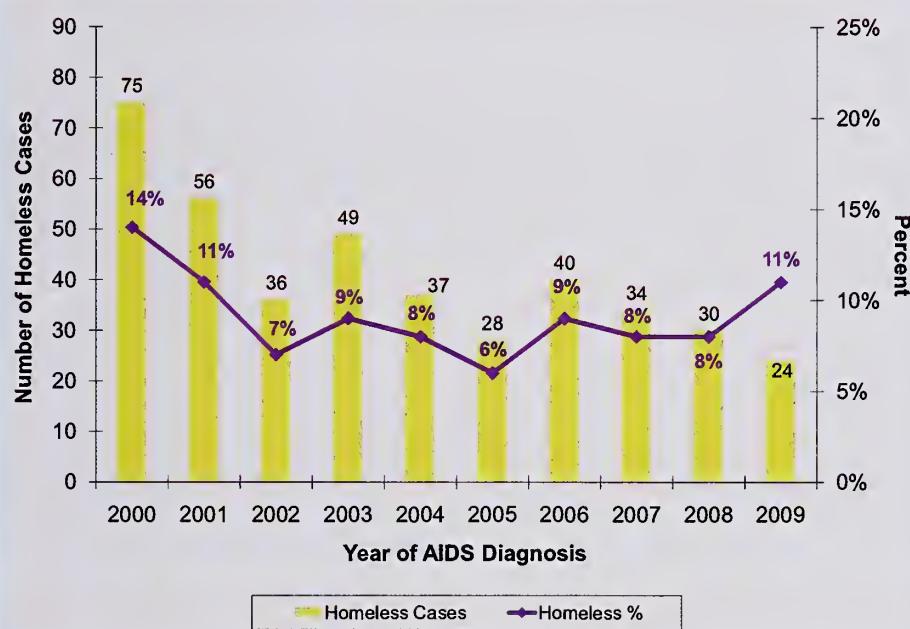
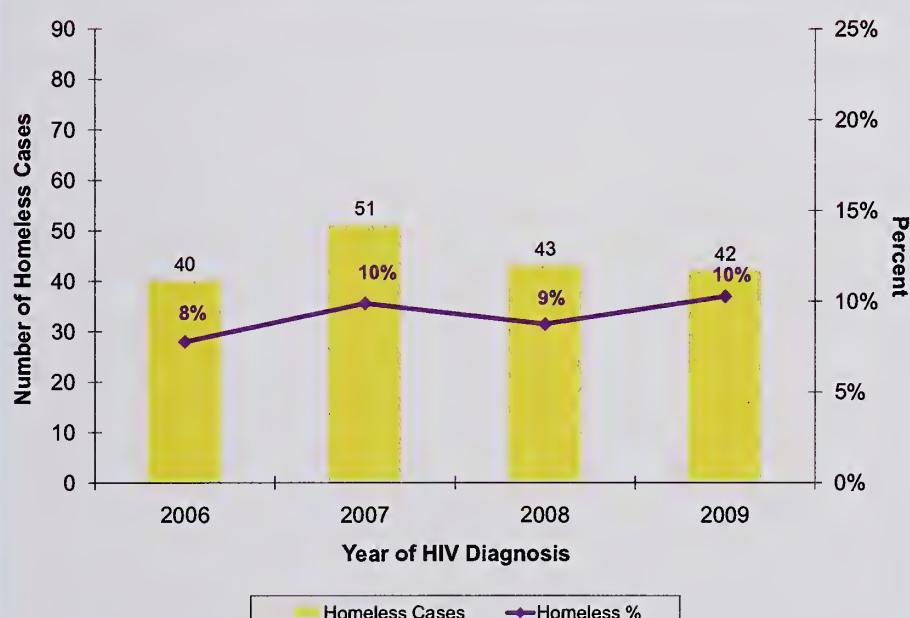


Figure 16.2 Number and percent of homeless cases diagnosed with HIV infection* by year of diagnosis, 2006-2009, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

HIV/AIDS among Homeless Persons

Compared to all HIV/AIDS cases diagnosed in 2006 to 2009, persons who were homeless at their HIV/AIDS diagnosis (diagnosed in 2006 to 2009) were more likely to be women, transgender, African American, and injection drug users. (Table 16.1).

Table 16.1 Characteristics of homeless HIV/AIDS cases compared to all HIV/AIDS cases diagnosed in 2006-2009, San Francisco

	Homeless AIDS 2006-2009 (N=128)	AIDS Cases 2006-2009 (N=1,498)	Homeless HIV non-AIDS Cases 2006-2009 (N=116)	HIV non- AIDS Cases 2006-2009 (N=1,343)
Gender				
Male	83%	89%	79%	90%
Female	10%	8%	15%	7%
Transgender	7%	3%	6%	3%
Race/Ethnicity				
White	48%	54%	50%	55%
African American	30%	19%	28%	14%
Latino	14%	17%	16%	21%
Other/Unknown	8%	9%	6%	11%
Exposure Category				
MSM	32%	65%	41%	71%
IDU	23%	10%	28%	7%
MSM IDU	34%	16%	24%	12%
Heterosexual	5%	6%	4%	4%
Other/Unidentified	5%	3%	2%	6%
Age at Diagnosis (years)				
0 - 19	5%	3%	3%	2%
20 - 29	30%	24%	31%	27%
30 - 39	30%	37%	25%	36%
40 - 49	23%	26%	29%	24%
50+	12%	10%	12%	10%

The San Francisco Department of Public Health (SFDPH) provides supportive housing for homeless persons with serious chronic medical illnesses through its Direct Access to Housing (DAH) program. DAH residents receive permanent housing that includes on-site health care services and/or direct linkage to medical care located near to the DAH units as well as case management and mental health care.

We conducted a computerized match between the DAH database and the AIDS case registry to identify homeless persons with AIDS who subsequently entered DAH. To assess the impact of housing on health care utilization patterns and costs we compared the change in the mean number of healthcare visits (by type of encounter) or lengths of stay within public hospitals, clinics, and skilled nursing facilities in San Francisco for these individuals in the 24 months before and after receipt of housing. The costs of care were estimated by applying the Medi-Cal reimbursement rate for the type of visit or duration of stay.

A total of 70 homeless persons with AIDS entered DAH between 1996 and 2006 of whom 62 were found to have received care within SFDPH. There were substantial reductions in medical hospital days (71%), skilled nursing facility days (65%), and overall cost of care (57%) after entering DAH (Table 16.2). With these declines was a concomitant increase (55%) in medical outpatient visits, mostly primary care. Given that the annual cost per DAH resident is approximately \$10,000-15,000, this shows that permanent supportive housing programs may be effective, cost-effective and even and cost-saving.

Table 16.2 Health care utilization and cost among homeless persons with AIDS who received housing through the Direct Access to Housing program, 1996-2006, San Francisco

Encounter Type	Mean number of encounters			
	24 months prior to receipt of housing	24 months after receipt of housing	Mean difference	Change (%)
Medical Outpatient (Visits)	18.3	28.3	-10*	-55
Medical Emergency Department (Visits)	1.8	1.6	0.2 [#]	13
Skilled Nursing Facility (Days)	34.2	11.9	22.4 [‡]	65
Medical Inpatient (Days)	16.4	4.8	11.6 [‡]	71
Psychiatric Inpatient (Days)	2.3	0.8	1.4 [#]	63
Cost (Dollars)	50,044	21,364	28,680*	57

* P Value <0.01

Not statistically significant

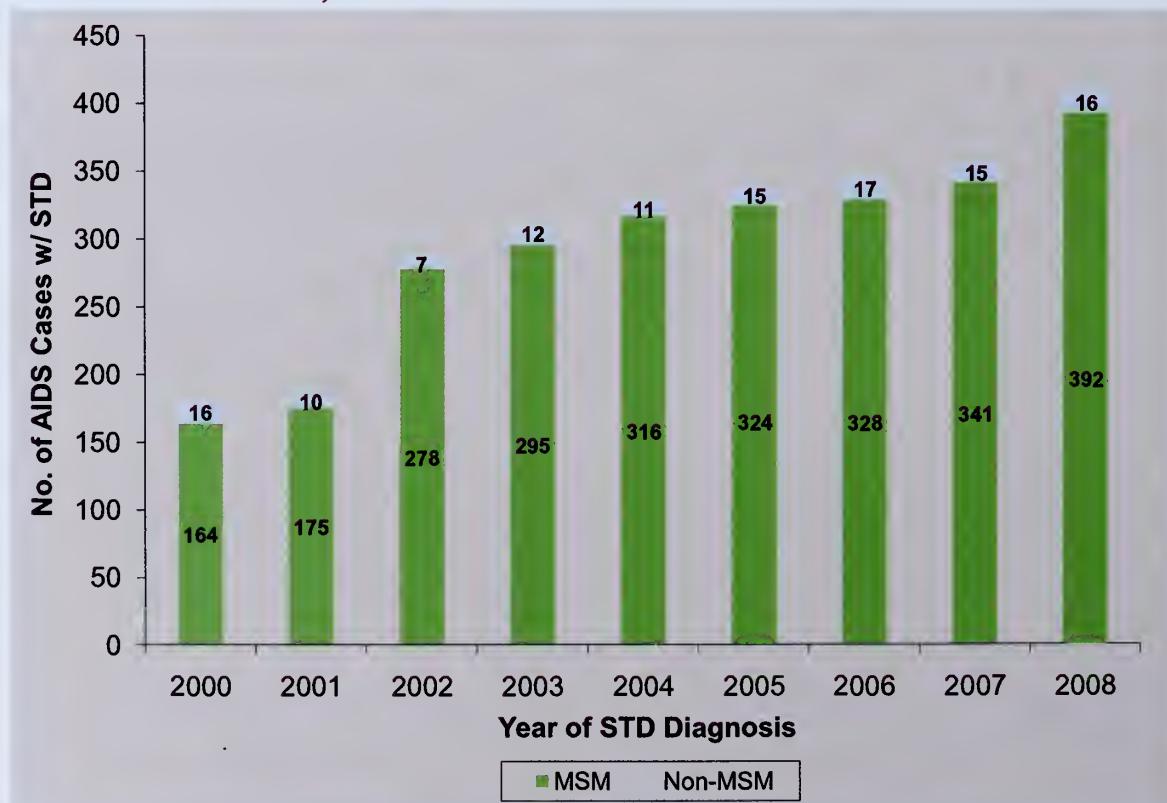
‡ P Value <0.05

17 Sexually Transmitted Diseases among Persons with HIV/AIDS

The occurrence of STD diagnosis among persons living with HIV/AIDS is an important marker for sexual risk behavior and potential HIV transmission. Diagnosis of sexually transmitted disease (STD) occurring among persons with HIV/AIDS was determined through a computerized match of the HIV/AIDS and STD case registries through 2008. The STD registry included persons reported with gonorrhea, chlamydia, non-gonococcal urethritis, or infectious syphilis. Cases of STDs among persons with AIDS have steadily risen since 2000 with a pronounced increase in 2002, and a moderate increase in 2008 (Figure 17.1). These jumps in STDs among persons with AIDS could be expected due to steep increases in male rectal gonorrhea (Figure 8.6) and syphilis (Figure 8.7), particularly among MSM, reported in 2002. Additionally, in 2008, primary, secondary, and early syphilis among MSM were again on the rise (Figure 8.7).

HIV non-AIDS cases were included in the match to identify STD diagnosis among persons with HIV infection who had not developed AIDS. In 2008, STD diagnoses occurred among 467 MSM HIV cases and 17 non-MSM HIV cases. All STDs occurred after the HIV/AIDS diagnosis, indicating unprotected sex among persons with known HIV infection.

Figure 17.1 Number of AIDS cases diagnosed with an STD by year of STD diagnosis, 2000-2008, San Francisco



18 Access to Care among Persons with HIV/AIDS

Estimate of unmet need for HIV medical care

We conducted an analysis to estimate unmet need for primary care for San Francisco residents diagnosed with HIV/AIDS. Persons with HIV/AIDS were considered to have a met need for care if they had at least one CD4 or viral load test or received antiretroviral therapy during the 12-month period from July 1, 2007 through June 30, 2008. Care information was obtained from viral load and CD4 test results and from medical record reviews, and supplemented by data provided from the California State Office of AIDS (see Technical Notes, Estimate of Unmet Need). The total number of persons living with AIDS (PLWA), the total number of persons living with HIV non-AIDS (PLWH), the proportion of PLWA who did not receive care from a sample of chart reviews, and the number of PLWH who did not receive care were determined. The unmet need estimates did not include undiagnosed cases of HIV infection or infected individuals who are not aware of their infection.

We estimated that there were 9,740 PLWA and 10,698 PLWH in San Francisco during this time. A total of 860 (9%) PLWA and 4,061 (38%) PLWH did not receive primary medical care during that time period (Table 18.1). The unmet need for PLWA was similar across all categories examined. For PLWH, those aged less than 40 years old, IDU, and persons with unidentified risk were identified to have the greatest unmet need for medical care.

Table 18.1 Unmet need* by demographic and risk characteristics among persons living with HIV/AIDS, July 2007-June 2008, San Francisco

	Persons with AIDS N=9,740		Persons with HIV/non-AIDS N=10,698		All HIV/AIDS N=20,438	
	with unmet need Number	with unmet need %	with unmet need Number	with unmet need %	with unmet need Number	with unmet need %
Total	860	9%	4,061	38%	4,921	24%
Gender						
Male	796	9%	3,769	38%	4,565	24%
Female	64	11%	292	37%	356	26%
Age in Years (as of June 2008)[#]						
20 - 29	21	11%	331	43%	352	36%
30 - 39	106	9%	1,034	42%	1,140	31%
40 - 49	337	9%	1,561	37%	1,898	23%
50 - 59	323	10%	881	37%	1,204	21%
60+	73	6%	224	31%	297	15%
Exposure Category						
MSM	592	8%	2,820	36%	3,412	23%
IDU	91	11%	309	46%	400	27%
MSM IDU	112	8%	401	34%	513	20%
Heterosexual	38	13%	116	38%	154	26%
Other/Unidentified	27	12%	415	63%	442	50%

* See Technical Notes "Estimate of Unmet Need."

The age category 0-19 years was omitted due to the small sample size.

Assessing access to medical care using CD4 tests as a marker for care

Despite widespread efforts to promote HIV testing, prevention and care, a significant percentage of HIV infected individuals are not receiving or accessing care early in their infection. We assessed receipt of medical care after HIV diagnosis using initial CD4 test as a marker for entry into medical care. The majority (83%) of persons diagnosed with HIV during 2006-2008 received medical care within 12 months of their HIV diagnosis (Table 18.2). The median value of the initial CD4 counts within 12 months of diagnosis was 403 cells/ μ L.

Certain subgroups were less likely to access care within 12 months after diagnosis than others, including persons with HIV non-AIDS, African Americans, Latinos, persons reported without a risk, and those between 13 and 29 years of age. Lower initial CD4 count may indicate diagnosis late in the course of HIV disease or delayed entry into care. People diagnosed with AIDS, non whites, heterosexuals, and persons over 50 years of age had a lower initial CD4 count.

Table 18.2 Percent of HIV/AIDS cases diagnosed between 2006 and 2008 receiving at least one CD4 test within 12 months of HIV diagnosis and the median of initial CD4 counts, San Francisco

	Number*	Percent received at least one CD4 test within 12 months following HIV diagnosis	Median of initial CD4 counts# (cells/ μ L)
Total	1,661	86%	403
HIV Status			
HIV infection (not AIDS)	1,260	83%	473
Concurrent HIV and AIDS diagnosis‡	164	100%	139
AIDS diagnosed \geq 1 months after HIV diagnosis	237	94%	293
Gender			
Male	1,537	86%	402
Female	124	90%	435
Race/Ethnicity			
White	902	89%	433
African American	250	84%	384
Latino	345	82%	334
Asian/Pacific Islander	122	89%	318
Other/Unknown	42	74%	512
Exposure Category			
MSM	1,165	87%	398
IDU	124	90%	426
MSM IDU	194	88%	456
Heterosexual	92	95%	305
Other/Unidentified	86	64%	360
Age at HIV Diagnosis (years)			
13 – 29	398	83%	421
30 – 39	598	87%	422
40 – 49	465	88%	370
50+	200	87%	362

* Excludes 20 cases that were diagnosed at a facility outside of San Francisco and 29 cases who died within six months of diagnosis.

Median of initial CD4 counts measured within 12 months following HIV diagnosis.

‡ AIDS was diagnosed in the same month and year of HIV infection diagnosis.

19 Special Report: Misclassification of HIV Late Testers

There are clear medical, economic, and prevention benefits to early diagnosis of HIV. In San Francisco, as well as nationally, HIV/AIDS surveillance data have been used as a method to estimate the prevalence and monitor trends in late diagnosis of HIV. At a national level, the Centers for Disease Control and Prevention (CDC) present the number, proportion, and characteristics of persons who developed AIDS within 12 months of their HIV diagnosis in their annual surveillance report. In the most recent report (CDC. *HIV Surveillance Report, 2008*; vol. 20. Published June 2010) an estimated total of 13,078 persons met this criterion. This constitutes 32% of persons reported with HIV from 37 states in the US with well-established HIV case reporting in 2007.

In San Francisco we have also monitored late diagnosis of HIV. The last time we presented data on the late testing was in our 2007 HIV/AIDS Epidemiology Annual Report where we reported that from 2003 through 2006 a total of 674 persons (24% of all HIV/AIDS cases reported in that time period) developed AIDS within 12 months of their HIV diagnosis. In San Francisco we define the date of HIV diagnosis as the earliest date of any of the following: the date of the first positive HIV test (either from a laboratory report or self-report as noted in the medical record), the date of the first CD4 or viral load test, or the date antiretroviral therapy was first prescribed. The date of AIDS diagnosis was the earliest date the person met any of the CDC AIDS surveillance case definition criteria.

It is assumed that a short time between HIV and AIDS diagnosis represents a delay in HIV testing because the average time from HIV infection to AIDS has been reported to be around 10 years. However, there are other factors such as rapid disease progression or factors that cause a transient drop in CD4 cells that can result in a short time between HIV and the surveillance case definition of AIDS (which includes a single CD4 count <200 cells or percentage <14).

We conducted a study to measure the accuracy of the definition of delayed testing by collecting information on prior negative tests among persons who were diagnosed with AIDS in 2007-2008 and reported to the health department through March 9, 2009 and whose initial HIV diagnosis was within 12 months of AIDS. We collected dates of negative HIV tests through patient and provider interviews and reviews of medical records. Persons who reported a negative HIV test less than five years from HIV diagnosis were re-classified as non late-testers. Persons who had never tested prior to diagnosis and those who reported a negative test five or more years before HIV diagnosis were classified as true late-testers. Persons who could not be located were considered to have an unverified late tester status.

There were 945 persons diagnosed with HIV/AIDS in 2007 and 2008. Of these, 249 (26%) developed AIDS within 12 months of HIV diagnosis. We found that 47% of persons whose AIDS diagnosis occurred within 12 months of HIV diagnosis had a negative HIV test within five years of HIV diagnosis (Table 19.1). Although we do not know the circumstances surrounding their progression to AIDS, our findings draw into question the assumption that persons who develop AIDS within 12 months of HIV diagnosis represent many years of not testing. Once we considered the prior negative HIV tests, the proportion of persons with HIV/AIDS who were late testers decreased from 26% to 9% (Table 19.2). If we assume that all of the persons for whom we could not obtain information on previous HIV tests are also late testers, then the proportion of late testers is 14%, still markedly lower than our previous estimate.

Given these findings, we have concluded that accurate measurement of late testing requires information on previous negative tests. Without this information delays in HIV diagnoses are likely to be overestimated.

Table 19.1 Reclassification of late testing after consideration of most recent negative HIV test among persons diagnosed with AIDS in 2007-2008, San Francisco

Reclassification of late testing	Number (%)
Persons who developed AIDS within 12 months of HIV diagnosis	249 (100)
No prior negative HIV tests or most recent negative test five or more years before HIV diagnosis (true late-tester)	85 (34)
Unable to obtain information on prior negative HIV tests	48 (19)
Documented negative HIV test within five years of HIV diagnosis (non late-tester)	116 (47)

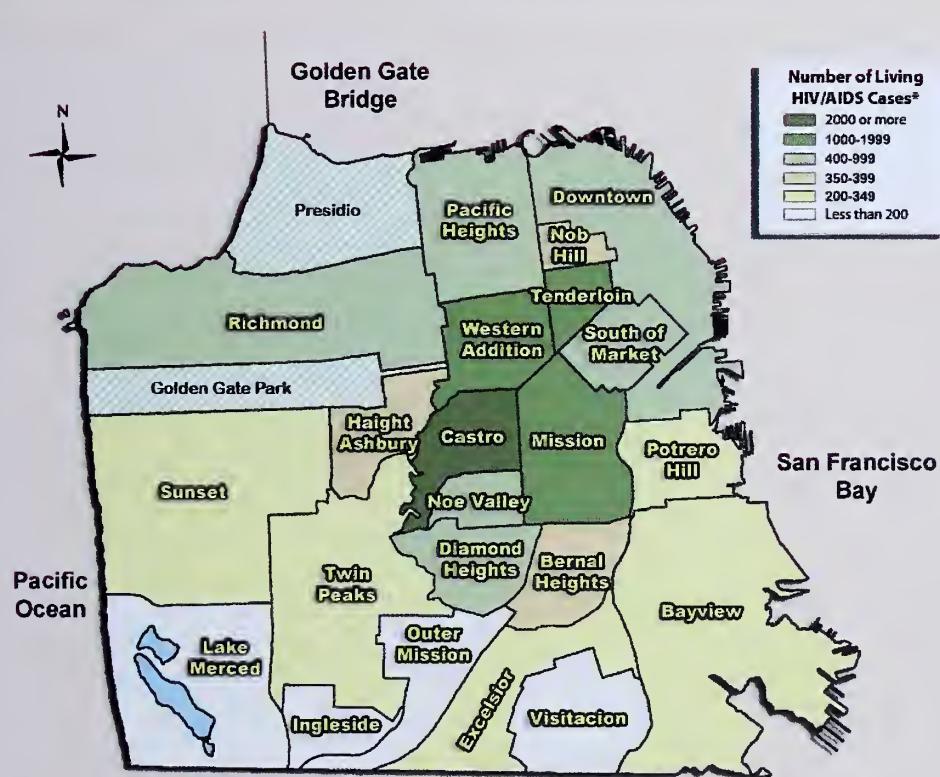
Table 19.2 Late testing among persons diagnosed with HIV/AIDS in 2007-2008, San Francisco

	Number (%)
Total HIV/AIDS cases diagnosed in 2007-2008	945 (100)
Developed AIDS within 12 months of HIV diagnosis	249 (26)
Developed AIDS within 12 months of HIV diagnosis, no prior negative HIV tests or had a negative test \geq 5 years before HIV diagnosis	85 (9)
Developed AIDS within 12 months of HIV diagnosis, no prior negative HIV tests or had a negative test \geq 5 years before HIV diagnosis or whose HIV testing history was not available	133 (14)

20 Geographic Distribution of HIV/AIDS

Map 20.1 illustrates the geographic distribution of living HIV/AIDS cases in San Francisco as of December 31, 2009. The data capture the neighborhood at time of HIV/AIDS diagnosis for San Francisco residents and do not necessarily reflect their current residence. The neighborhoods with the highest numbers are the Castro, Mission, Western Addition, and Tenderloin.

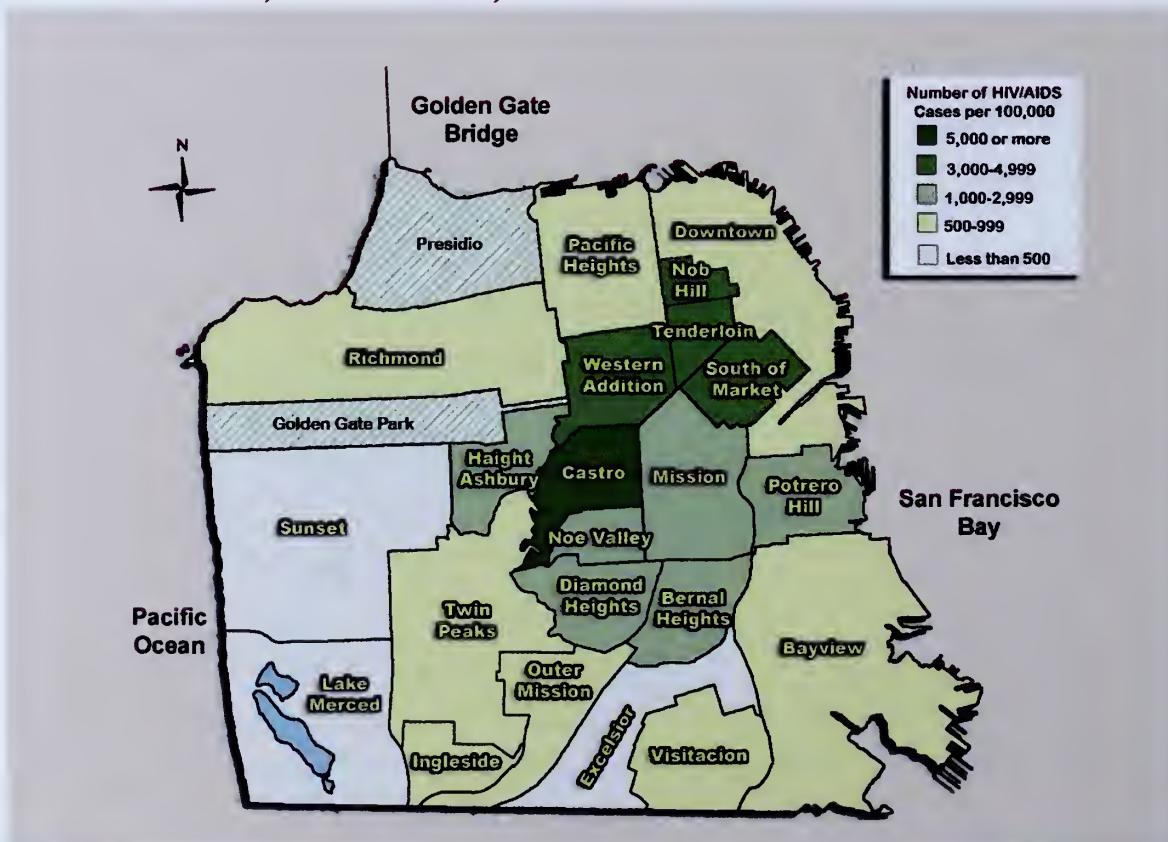
Map 20.1 Geographic distribution of persons living with HIV/AIDS, December 2009, San Francisco



Geographic Distribution of HIV/AIDS

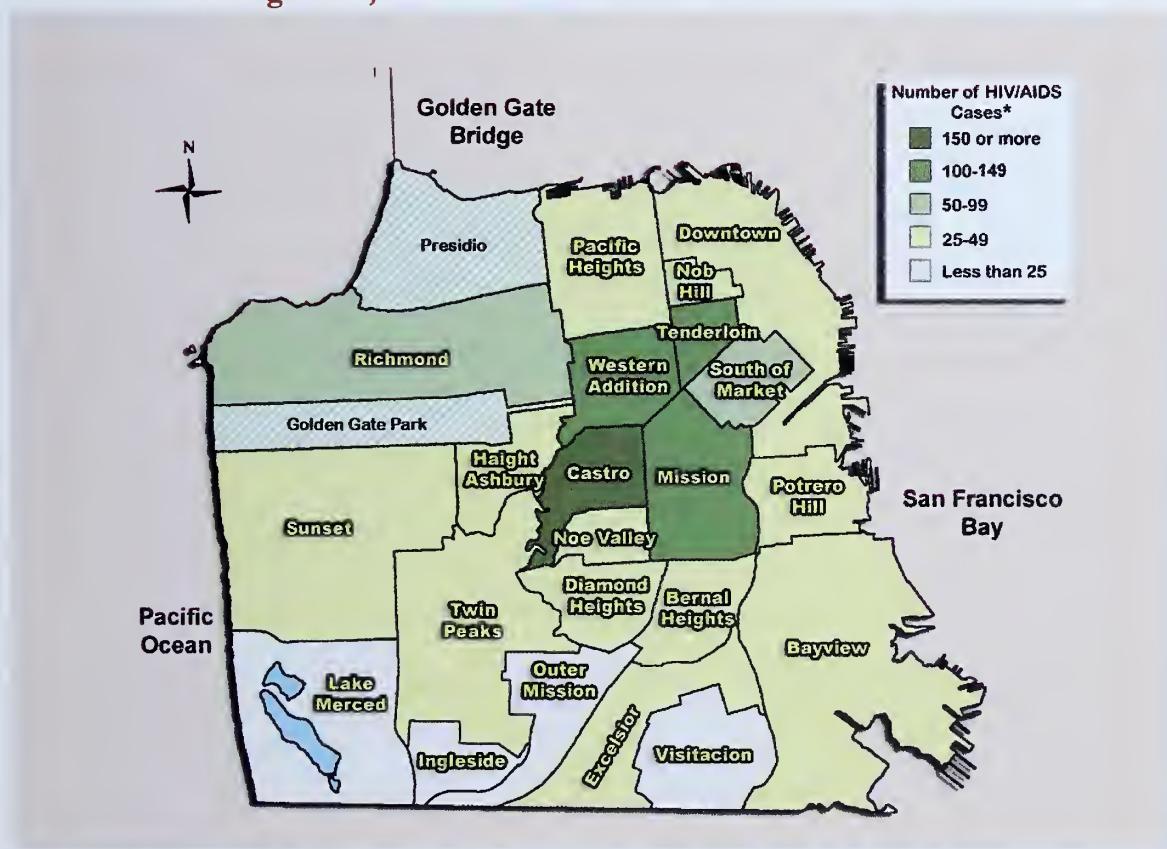
Map 20.2 illustrates the estimated prevalence rates among San Francisco residents using 2000 Census data to establish population size in each neighborhood. The prevalence rate was calculated using the total number of living HIV/AIDS cases divided by the population for each neighborhood. The Castro remains the most affected neighborhood with a prevalence rate of 11,320 cases per 100,000 (11.3%).

Map 20.2 Geographic distribution of HIV/AIDS prevalence rates per 100,000 population, December 2009, San Francisco



The geographic distribution of the total number of HIV/AIDS cases newly diagnosed from 2006 to 2009 was also examined and mapped by exposure category. Map 20.3 shows the Castro with the highest number of MSM cases, followed by the adjacent neighborhoods of Mission, Western Addition, and the Tenderloin.

Map 20.3 Geographic distribution of HIV/AIDS cases diagnosed in 2006-2009 among MSM, San Francisco

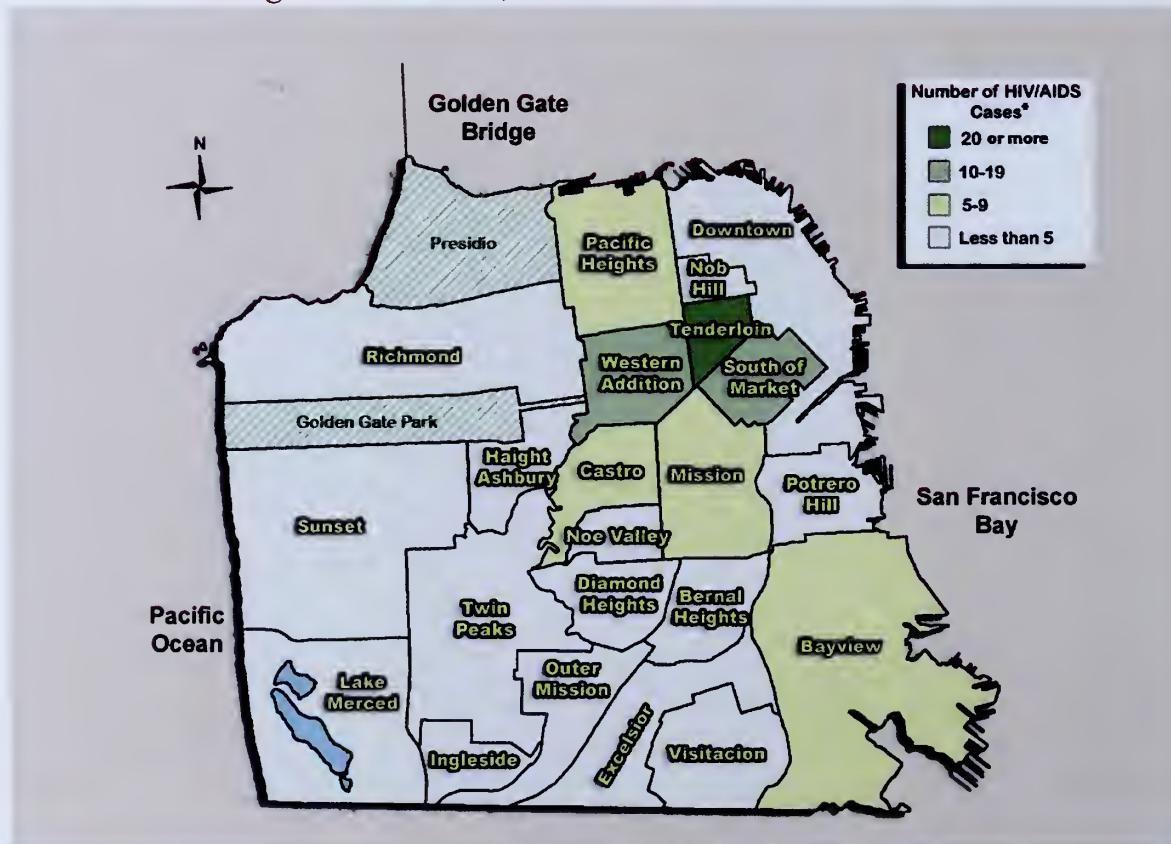


* Newly diagnosed homeless MSM cases in this time period (N=68) are not displayed on the map.

Geographic Distribution of HIV/AIDS

There was a higher number of HIV-infected injection drug users resided in the Tenderloin and its adjacent neighborhoods (Western Addition and South of Market) at the time of their HIV/AIDS diagnosis (Map 20.4) in 2006 to 2009. However, the homeless population represents the largest population among non-MSM IDUs with 45 cases; this number is a threefold the number of Tenderloin cases.

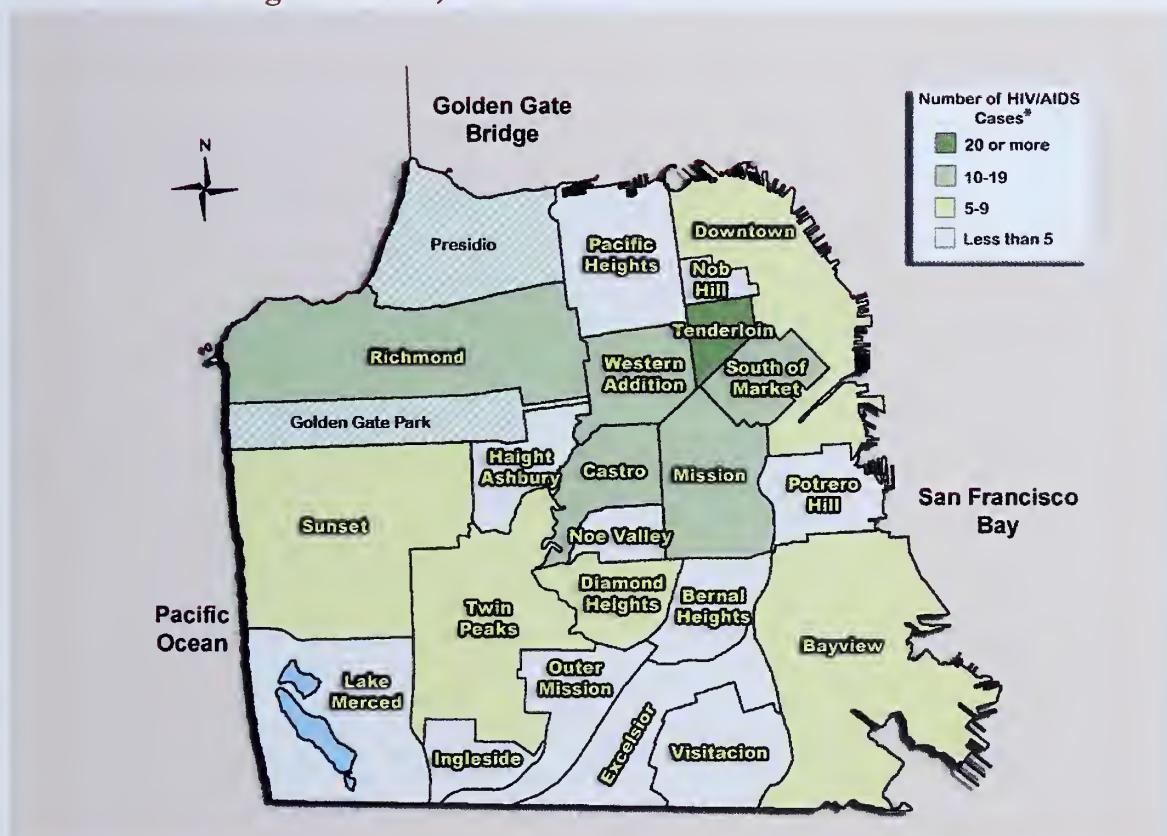
Map 20.4 Geographic distribution of HIV/AIDS cases diagnosed in 2006-2009 among non-MSM IDU, San Francisco



* Newly diagnosed homeless non-MSM IDU cases in this time period (N=45) are not displayed on the map.

Map 20.5 depicts the neighborhood-level distribution of newly diagnosed HIV/AIDS cases among MSM IDU. The homeless population (not displayed) comprised the highest number of MSM IDU cases diagnosed in 2006-2009 (N=40), followed by the Tenderloin (N=27). Similar to the distribution of MSM cases, the bordering neighborhoods of South of Market, Mission, Western Addition, and Castro also exhibited higher numbers of cases.

Map 20.5 Geographic distribution of HIV/AIDS cases diagnosed in 2006-2009 among MSM IDU, San Francisco

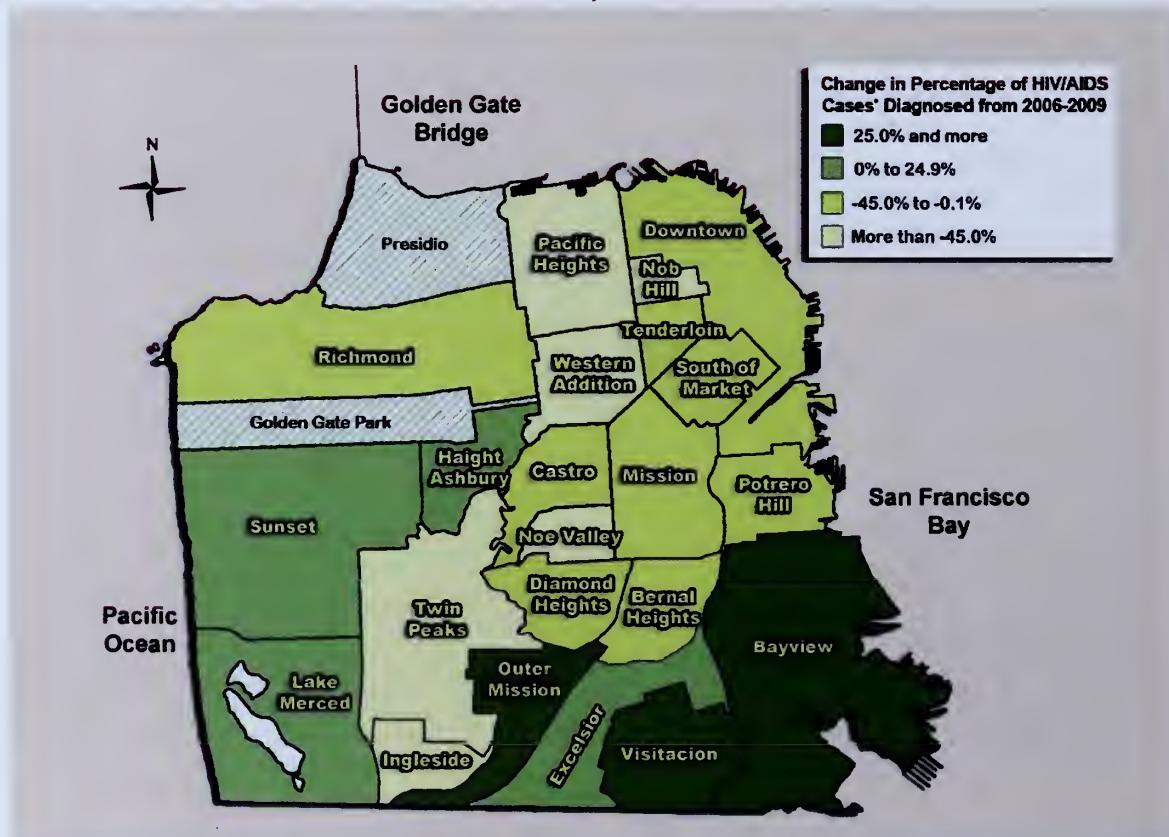


* Newly diagnosed homeless MSM IDU cases in this time period (n=40) are not displayed on the map.

Geographic Distribution of HIV/AIDS

We examined the change in the number of newly diagnosed HIV/AIDS cases from 2006 through 2009 by neighborhood. The percentage change was calculated for each neighborhood as the difference in the number of cases diagnosed between 2006 and 2009 divided by the number of cases in 2006. Map 20.6 shows that most parts of the city demonstrate a decrease in number of cases from 2006 to 2009. Despite the overall decrease in newly diagnosed cases in San Francisco, some neighborhoods in the southern parts of the city report leveling (Excelsior, Lake Merced, and Haight Ashbury) or increasing numbers of cases from 2006 to 2009 (Bayview, Visitacion Valley, Outer Mission, and Sunset). In addition, newly diagnosed homeless HIV/AIDS cases increased 13.5% during this time period (not displayed).

Map 20.6 Geographic distribution of changes in number of HIV/AIDS cases diagnosed between 2006 and 2009, San Francisco

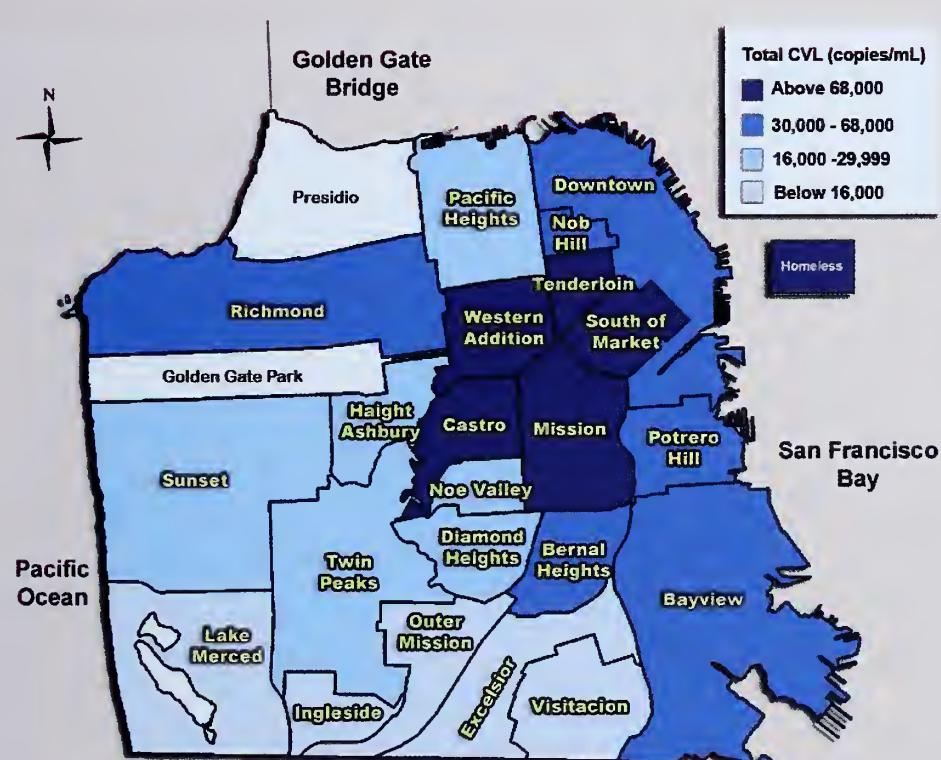


* Newly diagnosed homeless HIV/AIDS cases in this time period are not displayed on the map.

Community viral load (CVL) is a new population-based biomarker of community-level viral burden or overall level of infectiousness. Total CVL, defined as the sum of the most recent viral loads of all HIV-infected individuals in a community, reflects the total burden of HIV disease. Mean CVL is the mean of the most recent viral load divided by the number of HIV-infected individuals in the community. These two measures of CVL may reflect both the success of HIV prevention and care interventions (Das et al. PLoS ONE 2010).

For 2008, Map 20.7 shows the geographic distribution of total CVL; total CVL is highest where there is the greatest number of people living with HIV. However, both the Castro and the Mission have similar total CVL, even though the Castro has twice as many people living with HIV than the Mission. This may reflect higher viral loads among the residents of the Mission as compared to those in the Castro.

Map 20.7 Geographic distribution of total community viral load, December 2008, San Francisco

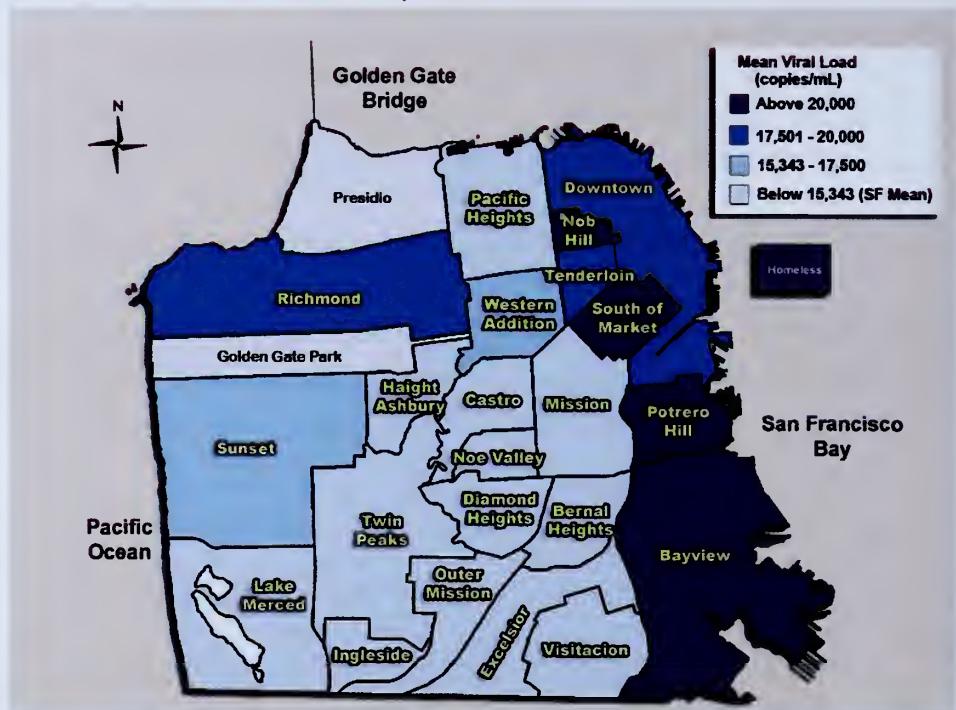


Geographic Distribution of HIV/AIDS

Map 20.8 shows the differences in mean CVL in San Francisco. Homeless individuals and the Bayview have the highest mean CVL, followed by the contiguous neighborhoods of South of Market, Nob Hill, Tenderloin, and Downtown. The neighborhoods with the higher mean CVL are the poor neighborhoods (Map 20.9) in the city.

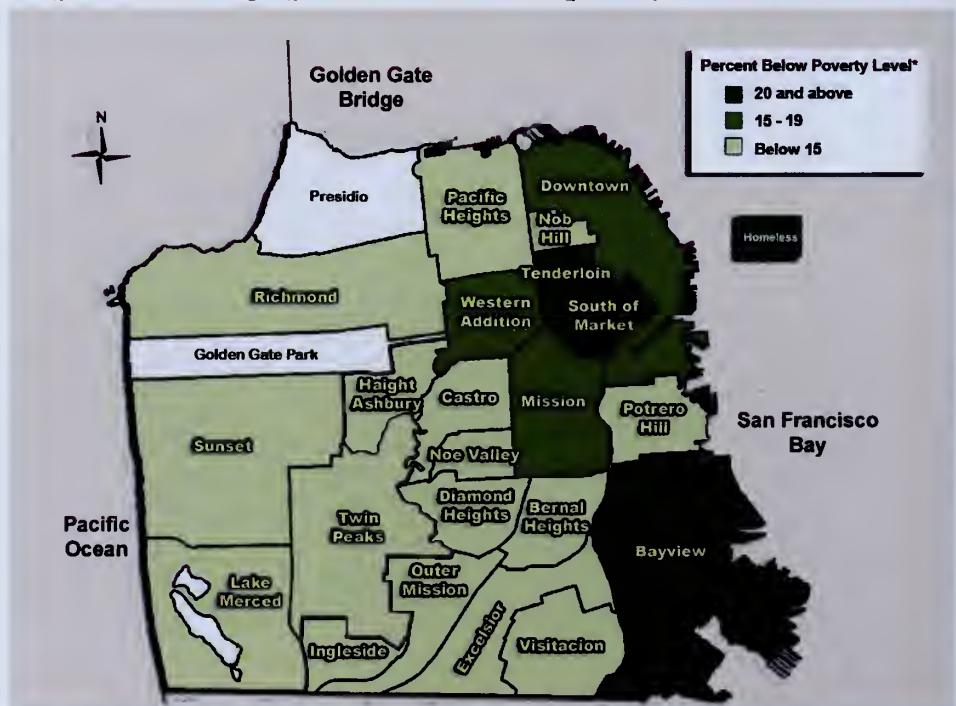
Map 20.8

Geographic distribution of mean community viral load, December 2008, San Francisco



Map 20.9

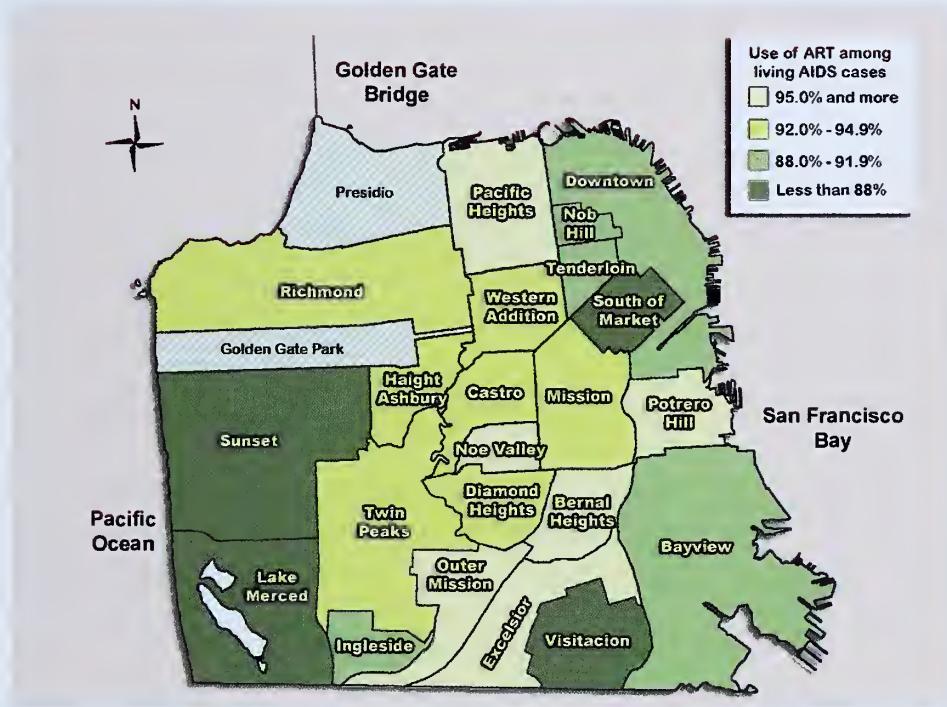
Geographic distribution of poverty level, San Francisco



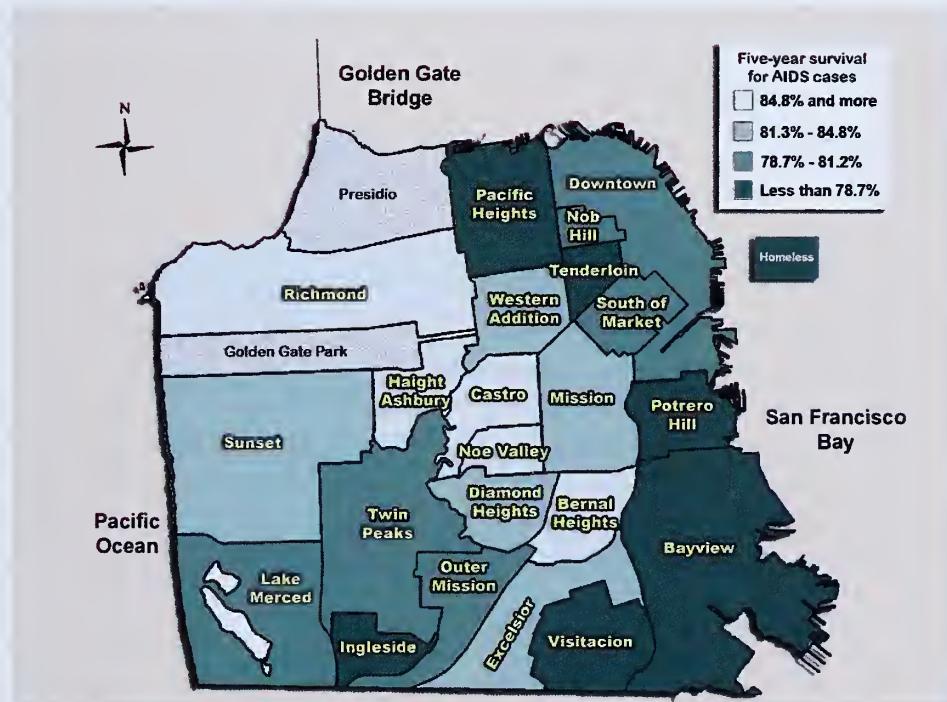
* Based on 2000 census data.

The disparities in mean CVL track the uptake of antiretroviral therapy and survival of AIDS cases. In general, areas with high CVL correspond to areas with low uptake of ART (Map 20.10) and worse survival (Map 20.11). This is consistent with our understanding of correlates of morbidity and mortality in the HIV epidemic in San Francisco.

Map 20.10 Geographic distribution of ART use among persons living with AIDS, December 2009, San Francisco



Map 20.11 Geographic distribution of 5-year survival after AIDS for persons diagnosed with AIDS between 1996 and 2009, San Francisco



T Technical Notes

HIV/AIDS Surveillance Methods

San Francisco HIV/AIDS cases are reported primarily through active surveillance activities in which public health personnel review laboratory and pathology reports and medical records to identify cases and complete the case report forms. HIV/AIDS cases are also identified through passive reporting, review of death certificates, validation studies using secondary data sources such as hospital billing records or other disease registries, and reports from other health departments. The surveillance system is evaluated regularly for completeness, timeliness, and accuracy.

Completeness of HIV and AIDS cases reporting in San Francisco is evaluated through a series of sensitivity studies conducted each year at various medical providers and facilities. Data on patients receiving care at the medical provider or facility is matched to the San Francisco HIV/AIDS registry and the completeness of case reporting is calculated. In 2009 sensitivity studies were conducted at two sites in San Francisco. The completeness of HIV case reporting and AIDS case reporting was found to be greater than 93% for both sites.

Publications of our HIV/AIDS data include only persons who were residents of San Francisco at the time they were diagnosed with HIV/AIDS. Our data also include San Francisco residents who were diagnosed in other jurisdictions. Persons diagnosed in San Francisco who resided in other jurisdictions at time of their HIV/AIDS diagnosis were excluded from the reports.

HIV/AIDS Incidence Rates

Annual race-specific rates are calculated as the number of cases diagnosed for a particular racial/ethnic group during each year divided by the population for that race/ethnicity, multiplied by 100,000. These rates are calculated separately for males and females. The annual populations are not available for transgender persons. Population denominators for the years 2000-2009 are obtained from the State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000-2050 data files, May 2004 (www.dof.ca.gov).

AIDS Survival

Survival was calculated as the time between the date of initial AIDS diagnosis and the date of death. This includes persons with at least one low CD4 (count<200 or percent<14%) and persons diagnosed with AIDS opportunistic illnesses. The follow-up information of cases was obtained through retrospective and prospective reviews of laboratory records and medical charts. Dates of death were obtained through review

of local death certificates, reports from the State Office of AIDS, and matches with the National Death Index (NDI). The most recent NDI match included deaths that occurred through December 31, 2007. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 2007, whichever was more recent.

Causes of Death

Cause of death information on death certificates is coded using the International Classification of Diseases, 10th revision (ICD-10) for deaths occurring in 1999 or after, and the 9th revision (ICD-9) for deaths occurring prior to 1999. These codes are then processed and evaluated using a computerized system to determine the underlying and contributory causes of death (www.cdc.gov/nchs/about/major/dvs/im.htm). We obtained the ICD coded causes of death from the California multiple-cause-of-death computer tape for persons with AIDS who died prior to 1996. For AIDS deaths that occurred in 1996 and after, the cause of death information was obtained through matches with the National Death Index. Deaths attributable to HIV infection or AIDS are coded as 042-044 under ICD-9 and B20-B24 under ICD-10. In addition, the AIDS opportunistic illnesses, if listed on death certificates, are included in the category of 'HIV/AIDS' cause of death.

Grouping of Data Categories

Data regarding certain racial/ethnic or risk categories are grouped together when the number of persons with HIV/AIDS in that particular group is small and/or does not present significant trends. For example, "Other" in the Race/Ethnicity breakdown represents Asian/Pacific Islander, Native American and people of mixed race. Whenever possible, this report presents the expanded race/ethnicity categories rather than aggregating into the group "Other". The label "Other" in the Exposure Category breakdown may include transfusion recipients, hemophiliacs, heterosexuals, persons acquiring AIDS perinatally, or persons of unidentified risk.

Transgender Status

In September 1996, the San Francisco Department of Public Health began noting transgender status when this information is contained in the medical record. Transgender individuals are listed as either male-to-female or female-to-male. The majority of transgender HIV/AIDS cases are male-to-female. Please note that there are several limitations of our transgender data. We believe that our report likely underestimated the number of transgender persons affected by HIV/AIDS because data collected for HIV/AIDS reporting are derived from the medical record. Consequently, information that may be discussed with the health care provider but not recorded in the medical record is generally not available for the purposes of HIV/AIDS case reporting.

Estimate of ART Use

Using surveillance data to estimate use of antiretroviral therapy (ART) will most likely result in an underestimate of the extent of its use. The underestimate occurs because use of ART is collected at the time a person with HIV infection is reported (which is often close to the time that they are diagnosed), a time at which many persons have not yet begun treatment. The San Francisco Department of Public Health collects follow-up information from selected health care facilities. For persons who receive care at these sites treatment data is likely to be more complete, because it allows us to capture the use of ART at some point following diagnosis after the date that the case report was completed. Follow-up information is also not available for persons who have moved away from San Francisco or who receive ongoing care outside of the city. Surveillance data provides information that indicates when a person was prescribed ART but does not provide information on adherence.

Estimate of Unmet Need

A data file is provided to us by the California State Office of AIDS to supplement our local data for unmet need estimate. The data file contains unduplicated records for persons with HIV/AIDS in San Francisco who were documented as having received care during July 1, 2007 to June 30, 2008. This information was obtained from Medi-Cal, AIDS Drug Assistance Program (ADAP), Kaiser Permanente Northern California, AIDS Regional Information and Evaluation System (ARIES), and the State HIV/AIDS Reporting System (HARS) records. Because data sources beyond the San Francisco HIV/AIDS case registry are included in this data file, the total numbers of cases in Table 18.1 are larger than the numbers presented in other tables of this report. This is most likely a reflection of differences in the residence at the time of diagnosis and the residence at the time of receipt of care.

D

Data Tables

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2009, San Francisco 3

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Cases	3	26	99	274	557	859	1236	1629	1763	2162
Deaths	0	8	32	111	273	534	807	877	1038	1275
Persons Living with AIDS	3	21	88	251	535	860	1289	2041	2766	3653
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Cases	2046	2283	2327	2073	1787	1565	1081	804	695	579
Deaths	1364	1505	1641	1599	1592	1481	987	422	401	356
Persons Living with AIDS	4335	5113	5799	6273	6468	6552	6646	7028	7322	7545
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cases	555	513	494	560	477	468	431	438	397	225
Deaths	348	322	323	301	305	312	288	267	173	138
Persons Living with AIDS	7752	7943	8114	8373	8545	8701	8844	9015	9239	9326

Figure 2.1 Number of AIDS cases by race/ethnicity, 2000-2009, San Francisco . . . 8

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
White	317	297	292	283	259	271	242	251	206	109
African American	112	97	87	104	78	81	80	78	77	53
Latino	93	73	76	126	109	86	75	73	65	44
Other	33	46	39	47	31	30	34	36	49	19

Data Tables

Figure 2.2 Number of cases diagnosed with HIV infection by race/ethnicity, 2006-2009, San Francisco 8

	2006	2007	2008	2009
White	300	279	245	204
African American	76	78	79	66
Latino	102	98	112	96
Other	42	62	57	45

Figure 2.3 Male annual AIDS incidence rates per 100,000 population by race/ethnicity, 2000-2009, San Francisco 9

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
White	159	149	147	142	128	137	120	123	98	51
African American	256	228	227	250	187	209	206	187	188	144
Latino	134	111	111	186	166	125	114	109	103	69
Other	23	32	25	34	20	19	23	26	30	12

Figure 2.4 Annual incidence rates of male cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2009, San Francisco 9

	2006	2007	2008	2009
White	140	132	117	96
African American	220	190	205	181
Latino	166	147	176	139
Other	29	41	38	32

Figure 2.5 Female annual AIDS incidence rates per 100,000 population by race/ethnicity, 2000-2009, San Francisco 10

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
White	12	9	7	4	7	5	5	4	7	3
African American	69	69	44	74	59	47	47	61	61	31
Latina	19	8	10	14	16	18	10	10	8	8
Other	1	3	3	2	1	4	2	1	5	1

Figure 2.6 Annual incidence rates of female cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2009, San Francisco 10

	2006	2007	2008	2009
White	12	8	8	5
African American	30	57	57	34
Latina	6	12	10	15
Other	3	3	3	1

Figure 2.7 Number of male AIDS cases by exposure category, 2000-2009, San Francisco 11

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
MSM	330	305	299	353	307	289	277	277	245	139
IDU	51	42	41	54	24	37	23	29	16	18
MSM IDU	87	82	88	70	74	77	71	65	65	28
Other	12	24	14	19	16	16	18	22	22	15

Figure 2.8 Number of male cases diagnosed with HIV infection by exposure category, 2006-2009, San Francisco 11

	2006	2007	2008	2009
MSM	360	332	346	290
IDU	22	27	18	13
MSM IDU	64	55	42	40
Other	29	41	37	26

Figure 2.9 Number of female AIDS cases by exposure category, 2000-2009, San Francisco 12

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
IDU	35	30	23	26	28	20	20	13	20	13
Heterosexual	15	10	9	13	6	14	7	16	17	5
Other	2	5	3	1	5	3	3	2	3	2

Data Tables

Figure 2.10 Number of female cases diagnosed with HIV infection by exposure category, 2006-2009, San Francisco 12

	2006	2007	2008	2009
IDU	19	14	14	10
Heterosexual	11	19	18	11
Other	6	8	7	7

Figure 5.2 Trends in specific causes of death by age group, 1996-2007, San Francisco 29

Deaths caused by HIV/AIDS			
	1996-1999	2000-2003	2004-2007
Under 40	78.4%	81.2%	68.6%
40-49	73.9%	78.2%	63.2%
50-59	70.6%	58.3%	62.4%
60 and over	61.6%	61.8%	52.1%

Deaths caused by non-AIDS cancer			
	1996-1999	2000-2003	2004-2007
Under 40	2.1%	1.8%	2.5%
40-49	3.7%	3.6%	8.7%
50-59	7.3%	13.8%	10.2%
60 and over	12.5%	13.7%	16.7%

Deaths caused by heart disease			
	1996-1999	2000-2003	2004-2007
Under 40	1.6%	3.6%	2.5%
40-49	2.0%	3.2%	4.7%
50-59	4.6%	7.8%	6.7%
60 and over	7.1%	11.8%	11.5%

Deaths caused by drug overdose, suicide, and mental disorders due to substance use			
	1996-1999	2000-2003	2004-2007
Under 40	5.6%	4.7%	15.1%
40-49	4.5%	6.0%	11.9%
50-59	3.0%	4.6%	9.0%
60 and over	4.5%	1.0%	3.1%

Figure 5.3 Age distribution for select underlying causes of death among persons with AIDS, 2004-2007, San Francisco 30

	Under 40	40-49	50-59	60 and over
HIV/AIDS	109	282	214	100
Non-AIDS cancer	4	39	35	32
Heart disease	4	21	23	22
Drug overdose	11	25	14	2
Suicide	9	14	10	2
Mental disorders due to substance use	4	14	7	2
Liver-related causes	5	12	4	5
Chronic obstructive lung disease	0	5	11	6

Figure 5.4 Leading causes of death among San Francisco male residents aged 25-54 years, 2002-2007 31

	2002	2003	2004	2005	2006	2007
Accident	94	95	78	92	111	134
Non-AIDS cancer	90	89	84	79	76	80
Heart disease	104	107	75	82	83	78
HIV/AIDS	132	126	115	105	79	69
Suicide	42	57	44	41	48	55
Homicide	19	27	34	34	35	36
Mental disorder	50	47	59	58	49	26
Liver disease	28	32	24	35	26	25
Cerebrovascular	15	15	18	17	9	11
COPD	10	9	4	10	6	7

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Figure 5.5 Leading causes of death among San Francisco female residents aged 25-54 years, 2002-2007 32

	2002	2003	2004	2005	2006	2007
Non-AIDS cancer	69	78	81	80	72	59
Mental disorder	12	16	8	23	13	7
Heart disease	31	30	23	28	22	14
Cerebrovascular	11	13	5	14	10	8
COPD	6	6	7	3	1	4
Liver disease	16	7	8	5	3	7
Accident	22	27	30	31	40	30
Suicide	9	14	13	11	11	12
Homicide	6	4	2	4	5	8
HIV/AIDS	11	16	16	14	15	7

Figure 5.6 Leading causes of death rates per 100,000 population among San Francisco male residents aged 25-54 years by race/ethnicity, 2007 33

	White	African American	Latino
HIV/AIDS	26	104	43
Heart Disease	29	144	15
Non-AIDS Cancer	28	88	15
Accident	53	296	37

Figure 5.7 Leading causes of death rates per 100,000 population among San Francisco male residents by age group, 2007 33

	0-29	30-39	40-49	50-59	60+
HIV/AIDS	4	5	58	65	23
Heart Disease	3	6	45	142	850
Accident	18	30	66	134	112
Non-AIDS Cancer	1	8	41	215	820
Mental Disorder	0	4	12	44	33
Suicide	9	22	23	29	29

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Male	2004	2005	2006	2007	2008	2009
Public	25%	31%	27%	29%	38%	39%
Private	47%	43%	44%	45%	40%	33%
None	27%	24%	25%	22%	19%	22%

Female	2004	2005	2006	2007	2008	2009
Public	67%	51%	70%	74%	80%	70%
Private	10%	22%	17%	13%	5%	5%
None	21%	27%	13%	10%	15%	25%

Transgender	2004	2005	2006	2007	2008	2009
Public	59%	58%	75%	50%	44%	60%
Private	0%	0%	0%	7%	22%	0%
None	41%	42%	25%	43%	33%	40%

Figure 8.1 AIDS cases, deaths, and prevalence among MSM, 2000-2009, San Francisco 40

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cases	438	402	403	447	398	378	359	355	319	172
Deaths	283	249	250	231	233	235	227	212	135	116
Persons Living with AIDS	6773	6926	7079	7295	7460	7603	7735	7878	8062	8118

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	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
White	280	261	260	253	239	237	221	225	183	91
African American	55	47	42	53	42	48	46	34	43	31
Latino	74	60	69	106	92	71	63	64	55	35
Other	29	34	32	35	25	22	29	32	38	15

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	2006	2007	2008	2009
White	262	242	211	179
African American	43	33	45	45
Latino	92	81	92	80
Other	35	52	51	40

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	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Primary	13	45	95	105	118	70	74	59	111	108
Secondary	27	71	193	215	206	148	143	124	194	189
Early Latent	11	36	151	159	180	162	151	136	189	197

Figure 9.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 2000-2009, San Francisco 46

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cases	88	72	65	80	52	57	43	42	36	31
Deaths	52	60	58	60	60	62	48	47	28	16
Persons Living with AIDS	736	748	755	775	767	762	757	752	760	775

Figure 9.2 AIDS cases among non-MSM IDU by race/ethnicity, 2000-2009, San Francisco 47

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
White	32	29	24	27	16	27	16	16	16	10
African American	46	34	36	35	27	24	20	22	15	15
Latino	9	5	2	14	8	5	6	2	3	3
Other	1	4	3	4	1	1	1	2	2	3

Figure 9.3 Cases diagnosed with HIV infection among non-MSM IDU by race/ethnicity, 2006-2009, San Francisco 47

	2006	2007	2008	2009
White	21	23	19	10
African American	15	15	10	8
Latino	4	2	2	4
Other	1	1	1	1

Figure 10.1 AIDS cases, deaths, and prevalence among heterosexuals, 2000-2009, San Francisco 49

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cases	19	17	15	21	14	19	20	32	25	13
Deaths	4	8	9	6	5	6	6	7	4	2
Persons Living with AIDS	146	155	161	176	185	198	212	237	258	269

Figure 10.2 AIDS cases among heterosexuals by race/ethnicity, 2000-2009, San Francisco 50

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
White	3	2	4	3	3	3	2	2	2	1
African American	9	10	6	13	3	5	9	21	11	6
Latino	6	2	2	3	5	7	6	7	4	6
Other	1	3	3	2	3	4	3	2	8	0

Figure 10.3 Cases diagnosed with HIV infection among heterosexuals by race/ethnicity, 2006-2009, San Francisco 50

	2006	2007	2008	2009
White	7	5	5	5
African American	9	19	13	9
Latino	4	9	8	5
Other	3	6	3	1

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	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cases	52	45	35	40	39	37	30	31	40	20
Deaths	25	26	29	28	23	28	32	19	22	6
Persons Living with AIDS	430	449	455	467	483	492	490	502	520	534

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	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
White	19	15	12	7	11	9	8	7	11	5
African American	22	22	14	23	18	14	14	18	18	9
Latina	10	4	5	7	8	9	5	5	4	4
Other	1	4	4	3	2	5	3	1	7	2

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Latina	3	6	5	8
Other	4	4	4	2

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	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
HIV Infected	5	5	2	0	3	1	0	0	2	1
Seroreverted	12	14	9	11	9	9	12	16	9	16
Status Unknown	2	1	0	0	1	0	0	0	0	0

	2004	2005	2006	2007	2008	2009
HIV Infected	1	0	0	0	0	0
Seroreverted	6	7	8	5	8	5
Status Unknown	0	0	0	0	0	0

Figure 15.1 AIDS cases, deaths, and prevalence among transgender persons, 2000-2009, San Francisco 62

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cases	23	15	17	24	17	12	12	14	9	5
Deaths	12	15	9	9	12	11	12	14	11	3
Persons Living with AIDS	164	164	172	187	192	193	193	193	191	193





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Acknowledgments

This report was prepared by the HIV Epidemiology Section staff. We wish to thank the San Francisco Sexually Transmitted Disease Prevention and Control Services and the San Francisco STOP AIDS Project for providing data in this report.

In addition, we wish to acknowledge the contribution of persons with HIV/AIDS, HIV/AIDS health care providers, community groups, researchers, and members of the community. Publication of this report would not have been possible without their cooperation, dedication, and hard work.

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E Executive Summary

The exact number of persons living with HIV/AIDS in San Francisco is difficult to verify as there are many who are unaware of their infection at a given point in time. Similarly, the number of persons who will acquire HIV infection in the course of the year can only be projected from a limited number of special studies or approximated indirectly from trends in behaviors related to HIV. In addition, the sizes of the populations at highest risk for acquiring HIV are not well known, as the U.S. Census does not record such factors as drug use, sexual orientation, or transgender status.

Nonetheless, San Francisco has a wealth of information that guides our estimates of the HIV/AIDS epidemic. Approximately every five years, the HIV Epidemiology Section gathers together the most recent data from multiple sources, reconciles differences across these sources, and assesses their uncertainties to synthesize the most plausible estimates of HIV prevalence, HIV incidence, and the number of persons in the groups at highest risk. These figures, referred to as the “San Francisco HIV Consensus Estimates,” were most recently compiled in 2011 and are presented in Table 1.5 of this report.

Overall, the 2011 HIV Consensus Estimates project cautious optimism. The number of new HIV infections forecasted for the year 2011 is 736 – lower than the projection made for 2006 (977). However, the uncertainties of the data suggest an upper margin of error that overlaps 977, and we conclude a trend of slight decline rather than dramatic decline. As of January 1, 2011, the number of San Francisco residents living with HIV was estimated to be 18,576, or approximately 2.3% of the total population. The large majority of estimated living and new HIV cases are among men who have sex with men (MSM), with most other existing and newly occurring cases represented by injection drug users (IDU), especially MSM IDU. In terms of rates for new infections, transfemales and transmales who inject drugs comprise the most rapidly infected groups. The numbers of HIV cases among non-injecting heterosexuals in San Francisco remain low.

Other data presented in this report provide evidence of continuing improvements in the care and treatment of persons living with HIV/AIDS. San Francisco has a high coverage of antiretroviral treatment for persons with HIV infection. Testing coverage is also high as evidenced by a low proportion of persons remaining undiagnosed and increasing CD4 counts at diagnosis. The early diagnosis and rapid linkage to treatment is translating into improved health outcomes for thousands of San Franciscans. Mortality among HIV/AIDS patients continues to fall.

This year marks the 30 anniversary of the first identified AIDS cases. This report therefore provides a backdrop to take stock of the decades of progress in reducing the suffering of persons with HIV/AIDS and the recent encouraging trends in decreasing new infections. Despite the good news found in this report, HIV/AIDS still has no cure; there is no effective vaccine, and at best several hundred of our residents will continue to be infected each year for many foreseeable years to come. The work is not yet done.

1 Overview of HIV/AIDS in San Francisco

HIV/AIDS surveillance in San Francisco is conducted through various methods and evaluated on a regular basis (see Technical Notes, HIV/AIDS Surveillance Methods). There were a cumulative total of 28,793 San Francisco residents diagnosed with AIDS from the beginning of the epidemic to December 31, 2010 (Table 1.1). This comprises 18% of California AIDS cases and 3% of AIDS cases reported nationally. Compared to cases reported in California and the United States, AIDS cases in San Francisco are more likely to be male, white, and to occur among men who have sex with men (MSM), including MSM who also inject drugs intravenously (MSM IDU).

HIV/AIDS cases diagnosed in 2010 exhibit different distributions in demographic and exposure categories. Compared to cumulative San Francisco AIDS cases, there was a greater proportion of females, people of color, and people infected through heterosexual contact. Compared to HIV/AIDS cases diagnosed nationally in 2009, San Francisco's recently diagnosed HIV/AIDS cases were more likely to be male, white, and MSM.

Table 1.1 Characteristics of cumulative AIDS cases and newly diagnosed HIV/AIDS cases in San Francisco, California and the United States

	Cumulative AIDS Cases*			Newly Diagnosed HIV/AIDS Cases*	
	San Francisco ¹ (N = 28,793)		California ² (N = 159,329)	United States ³ (N = 1,080,714)	San Francisco ¹ , 2010 (N = 399)
	Number	%	%	%	%
Gender					
Male	27,167	94%	90%	80%	90%
Female	1,211	4%	9%	20%	7%
Transgender [#]	415	1%	1%	--	3%
Race/Ethnicity					
White	20,298	70%	54%	39%	50%
African American	3,649	13%	18%	42%	14%
Latino	3,543	12%	25%	17%	21%
Asian/Pacific Islander	913	3%	3%	<1%	11%
Native American	128	<1%	<1%	<1%	1%
Other/Unknown	262	1%	<1%	<1%	3%
Exposure Category					
MSM	21,267	74%	67%	44%	62%
IDU	2,180	8%	10%	21%	8%
MSM IDU	4,430	15%	10%	7%	14%
Heterosexual	479	2%	6%	14%	7%
Other/Unidentified	437	2%	7%	14%	9%

* Percentages may not add to 100% due to rounding.

1 San Francisco data are reported through March 9, 2011 for cases diagnosed through December 31, 2010.

2 California data are reported through December 2010. California data on newly diagnosed HIV/AIDS cases are not available.

3 U.S. data are reported through December 2009 and may be found in the CDC HIV Surveillance Report, 2009; Vol.21. U.S. data for HIV/AIDS cases reflect unadjusted numbers for 40 states with confidential name-based HIV reporting.

Transgender data are not reported by the United States. See Technical Notes "Transgender Status."

Overview of HIV/AIDS in San Francisco

For San Francisco AIDS cases, the distribution of HIV exposure categories differs by race/ethnicity and gender. Among men, MSM account for the majority of male AIDS cases within all racial/ethnic groups (Table 1.2). In African American men, injection drug use among heterosexuals is the second leading exposure category. However, for men of all other racial/ethnic groups, MSM IDU represents the second most frequent exposure category. Cumulatively, less than 2% of men with AIDS acquired HIV infection through heterosexual contact, transfusion of blood or blood products, or other exposure categories.

Among women with AIDS, the most frequent exposure category for whites, African Americans, Latinas, and Native Americans is injection drug use (IDU) followed by heterosexual contact. For Asian/Pacific Islander women, 50% acquired their infection through heterosexual contact, 25% through injection drug use, and 16% through transfusion of blood or blood products.

Compared to men and women with AIDS, transfemale AIDS cases were more likely to be in a transmission category involving injection drug use. Among transfemale AIDS cases, 57% of whites, 69% of African Americans, 44% of Latinos and 33% Asian/Pacific Islander were IDU.

Table 1.2 Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2010, San Francisco

	White Number (%)	African American Number (%)	Latino Number (%)	Asian/Pacific Islander Number (%)	Native American Number (%)
Male					
MSM	16,133 (82)	1,529 (51)	2,538 (78)	679 (84)	54 (49)
IDU	507 (3)	679 (23)	172 (5)	26 (3)	9 (8)
MSM IDU	3,007 (15)	619 (21)	419 (13)	63 (8)	44 (40)
Heterosexual	34 (<1)	65 (2)	42 (1)	13 (2)	2 (2)
Transfusion/ Hemophilia	50 (<1)	17 (1)	23 (1)	12 (1)	0 (0)
Other/Unidentified	64 (<1)	61 (2)	54 (2)	20 (2)	2 (2)
Male Subtotal	19,795	2,970	3,248	813	111
Female					
IDU	254 (65)	387 (71)	82 (47)	16 (25)	12 (86)
Heterosexual	87 (22)	125 (23)	70 (40)	32 (50)	2 (14)
Transfusion/ Hemophilia	29 (7)	10 (2)	10 (6)	10 (16)	0 (0)
Other/Unidentified	20 (5)	25 (5)	12 (7)	6 (9)	0 (0)
Female Subtotal	390	547	174	64	14
Transfemale*					
IDU	64 (57)	91 (69)	53 (44)	12 (33)	#
Non IDU	49 (43)	41 (31)	68 (56)	24 (67)	#
Transfemale Subtotal	113	132	121	36	#

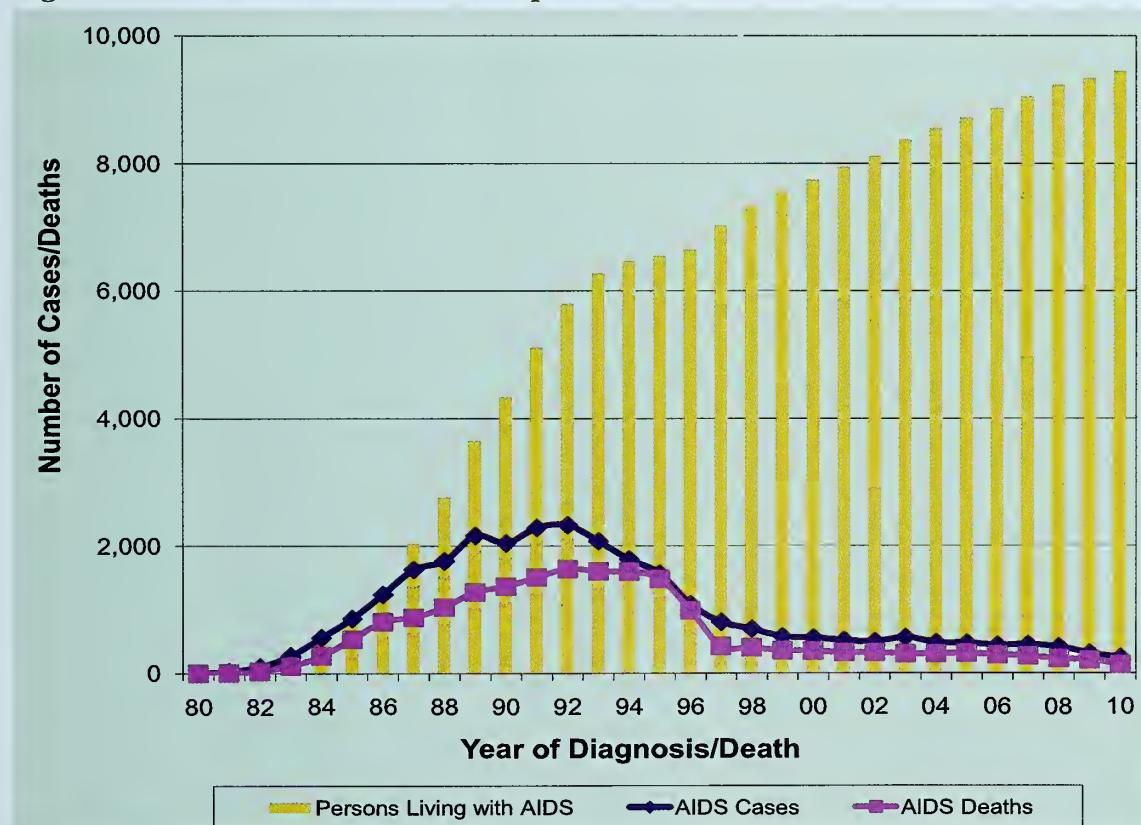
* Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Data are not released due to potential small population size.

The number of new AIDS cases diagnosed each year among San Francisco residents reached a peak of 2,328 cases in 1992 and has declined since then (Figure 1.1). Deaths among persons with AIDS reached a plateau between 1992 and 1995 and declined thereafter. The sharpest decline in AIDS deaths occurred between 1995 and 1997, reflecting the impact of combination antiretroviral therapies. Since 1999, slight declines have continued in both cases and deaths. Delays in reporting affect the number of cases and deaths for recent years. Therefore, the numbers of cases and deaths for 2009 and 2010 may be revised upward in future reports.

The number of San Franciscans living with AIDS has continued to rise every year since 1980. This is due to effective antiretroviral therapy and a lower number of AIDS deaths than new AIDS cases each year. There were 9,452 San Francisco residents living with AIDS by the end of 2010.

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2010, San Francisco

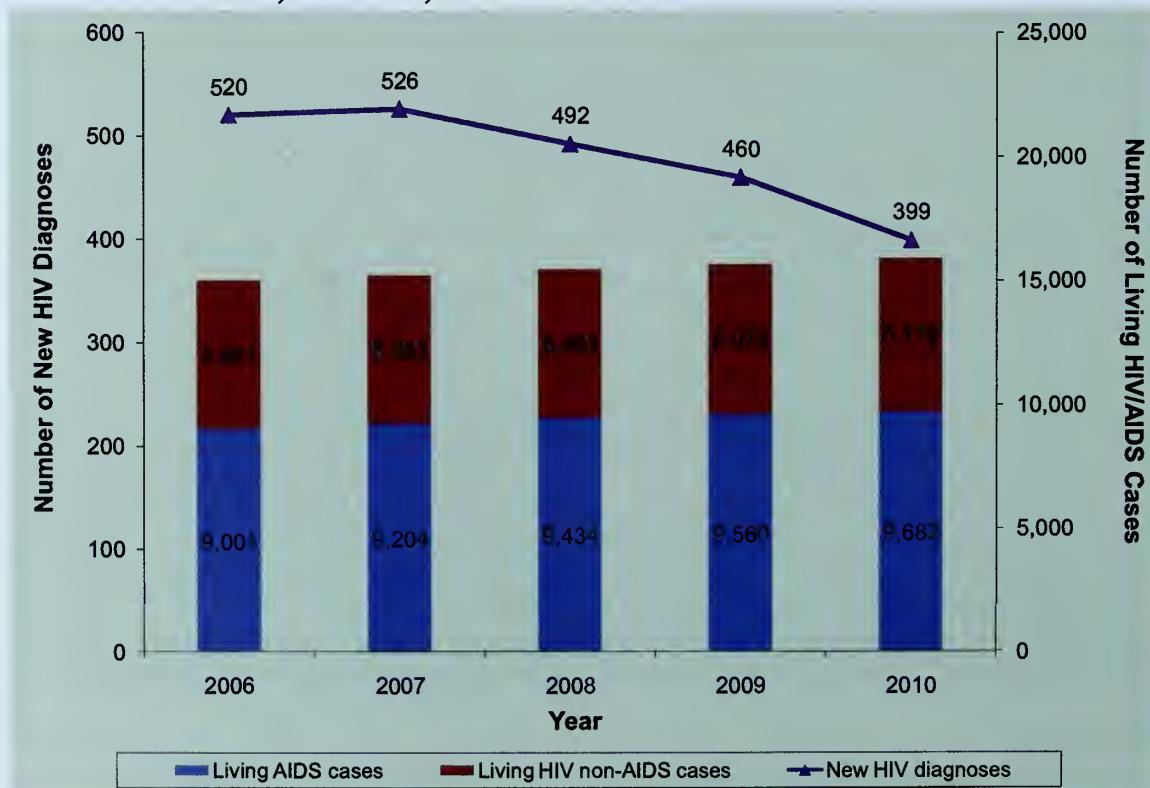


Overview of HIV/AIDS in San Francisco

Figure 1.2 illustrates the number of persons newly diagnosed with HIV infection (line) and number of persons living with HIV/AIDS between 2006 and 2010 (stacked bars). The date of HIV diagnosis for newly diagnosed cases was determined based on the earliest date of any of the following: a) HIV antibody test, b) viral load or CD4 test, c) initiation of antiretroviral therapy, or d) patient self-report of a positive HIV test. The number of new HIV diagnoses shown by year includes persons who were diagnosed in that year with HIV non-AIDS, concurrent HIV and AIDS diagnosis, or initially diagnosed with HIV non-AIDS and developed AIDS in subsequent year.

The number of new HIV diagnoses declined between 2007 and 2010. For recent years, the numbers are lower for cases diagnosed due to reporting delay. The number of living cases by year includes persons who were diagnosed with HIV/AIDS during or prior to the year shown and known to be alive by the end of that year. The number of persons living with HIV/AIDS continued to increase from 14,982 in 2006 to 15,861 in 2010. The increasing number of living cases is a reflection of both a steady addition of newly diagnosed cases over time coupled with a decline in deaths in each year. These data only include persons who have been diagnosed and reported to the health department. HIV-infected persons who are unaware of their infection and persons diagnosed with an anonymous HIV test are not included. Thus, these figures may underestimate the true prevalence.

Figure 1.2 Number of cases diagnosed with HIV infection and HIV/AIDS prevalence*, 2006-2010, San Francisco



* The number of living AIDS cases includes persons who were San Francisco residents at the time of HIV diagnosis and progressed to AIDS while they were a resident in another jurisdiction. The number of living HIV non-AIDS cases includes persons reported both by name and by a non-name code prior to 2006.

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Table 1.3 shows the characteristics of persons diagnosed with HIV between 2007 and 2010. The majority were male, white, aged 20-49 years, and MSM. Race/ethnicity distributions were fairly similar across the four years. There were no children (<13 years) diagnosed with HIV during this time period.

**Table 1.3 Characteristics of persons newly diagnosed with HIV, 2007- 2010,
San Francisco**

	Year of HIV Initial Diagnosis*			
	2007	2008	2009	2010
Total Number	526	492	460	399
Gender				
Male	88%	90%	90%	90%
Female	8%	8%	6%	7%
Transfemale [#]	4%	2%	4%	3%
Race/Ethnicity				
White	53%	51%	50%	50%
African American	15%	16%	16%	14%
Latino	19%	22%	21%	21%
Asian/Pacific Islander	9%	8%	9%	11%
Native American	0%	1%	0%	1%
Other/Unknown	4%	2%	4%	3%
Age at HIV Diagnosis (years)				
0 – 12	0%	0%	0%	0%
13 – 19	2%	2%	1%	1%
20 – 29	26%	24%	24%	27%
30 – 39	36%	36%	31%	28%
40 – 49	26%	28%	27%	29%
50+	11%	10%	17%	14%
Exposure Category				
MSM	66%	72%	73%	62%
IDU	7%	6%	6%	8%
MSM IDU	13%	9%	12%	14%
Heterosexual	8%	7%	4%	7%
Other/Unidentified	5%	6%	5%	9%

* Data include persons with a diagnosis of HIV (not AIDS), an initial diagnosis of HIV (not AIDS) and later diagnosed with AIDS, and concurrent diagnosis of HIV and AIDS, reported to the SFDPH as of March 9, 2011. Percentages may not add to 100% due to rounding.

Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes “Transgender Status.”

Overview of HIV/AIDS in San Francisco

Characteristics of living HIV/AIDS cases in San Francisco are different than statewide and nationwide cases (Table 1.4). Compared to California and U.S. living HIV/AIDS cases, San Francisco living HIV/AIDS cases are more likely to be male, white, and MSM. There is a larger proportion of persons living with HIV/AIDS in California and the U.S. that are female, African Americans and Latinos. Heterosexual contact and IDU (non-MSM) are also more common among California and U.S. cases than San Francisco cases.

Table 1.4 Characteristics of persons living with HIV/AIDS in San Francisco, California and the United States, December 2010

	San Francisco¹		California²		United States³
	Living HIV Non-AIDS Case	Living HIV/AIDS Cases	Living HIV Non-AIDS Cases	Living HIV/AIDS Cases	Living HIV/AIDS Cases
Total Number	6,179	15,861	40,507	110,994	652,294
Gender					
Male	92%	92%	86%	87%	72%
Female	6%	6%	13%	12%	28%
Transgender	2%	2%	1%	1%	--
Race/Ethnicity					
White	62%	63%	47%	46%	33%
African American	13%	14%	19%	19%	48%
Latino	16%	16%	30%	31%	17%
Asian/Pacific Islander	5%	5%	4%	4%	<1%
Native American	1%	1%	<1%	<1%	<1%
Other/Unknown	3%	2%	<1%	<1%	<1%
Exposure Category					
MSM	74%	73%	67%	65%	39%
IDU	6%	7%	6%	8%	14%
MSM IDU	12%	14%	6%	8%	4%
Heterosexual	3%	3%	9%	9%	20%
Other/Unidentified	5%	3%	12%	10%	23%

1. San Francisco cases are reported through March 9, 2011 for cases diagnosed through December 31, 2010 and include both name-based and code-based HIV cases.

2. California cases are reported through December 31, 2010 and include only the name-based HIV cases.

3. U.S. data reflect unadjusted living cases, as of December 2008 for 40 states with confidential name-based HIV reporting.

The 2011 HIV Consensus Estimates

Approximately every five years, the most recent available data from multiple sources are gathered together, assessed for their strengths and limitations, and synthesized to produce the best possible estimates and projections of the HIV epidemic. The effort, known as the “San Francisco HIV Consensus Estimates” was conducted anew in 2011 with results shown below.

Table 1.5 presents the estimated size of the behavioral risk population and the number of and percent living with HIV as of January 1st, 2011. Overall, 18,576 San Francisco residents are estimated to be living with HIV. The majority are MSM and MSM IDU. Transfemales (MTF), including those who inject drugs (MTF IDU), suffer a high burden of infection in terms of relative numbers infected (HIV prevalence). The number of new HIV infections projected to occur in the city during 2011 is 736, with a lower and upper plausible range of 534 to 977. As for rates of new infections (HIV incidence), the epidemic is currently moving fastest among transfemales, with a moderate rate among MSM. Outside of persons who inject drugs, HIV incidence among heterosexuals is low.

Table 1.5 The 2011 HIV consensus estimates: population size, HIV prevalence, and HIV incidence by behavioral risk population, San Francisco

Behavioral Risk Population	Population size on 1/1/2011	Number HIV+ on 1/1/2011	% HIV+	New infections during 2011	Incidence rate (% per year)
MSM	59,809	13,565	22.70%	585	1.27%
MTF	1,064	377	35.50%	17	2.48%
MSM IDU	4,874	2,308	47.40%	50	1.95%
FSM/F IDU	5,722	599	10.50%	14	0.27%
MSF IDU	7,884	986	12.50%	20	0.29%
MTF IDU	464	206	44.40%	15	5.77%
FSM/F (at risk population)	3,626	289	8.00%	17	0.51%
FSM/F (total population)	335,586		0.09%		0.01%
MSF (at risk population)	2,991	138	4.60%	18	0.63%
MSF (total population)	281,976		0.05%		0.01%
Total	816,770	18,576*	2.27%	736	0.09%
			Lower plausible	534 [#]	
			Upper plausible	977 [‡]	

MSM: Men who have sex with men

MTF: Male to female transgender persons

MSM IDU: MSM who also inject drugs

FSM/F IDU: Female injection drug users who have sex with males/females

MSF IDU: Heterosexual male injection drug users

MTF IDU: MTF who also inject drugs

FSM/F: Females who have sex with males/females

MSF: Males who have sex with females

* Includes other populations not listed in the table such as infants, children, and persons exposed through transfusion of blood or blood products.

Reported cases +23% unknown.

‡ 2006 Estimate.

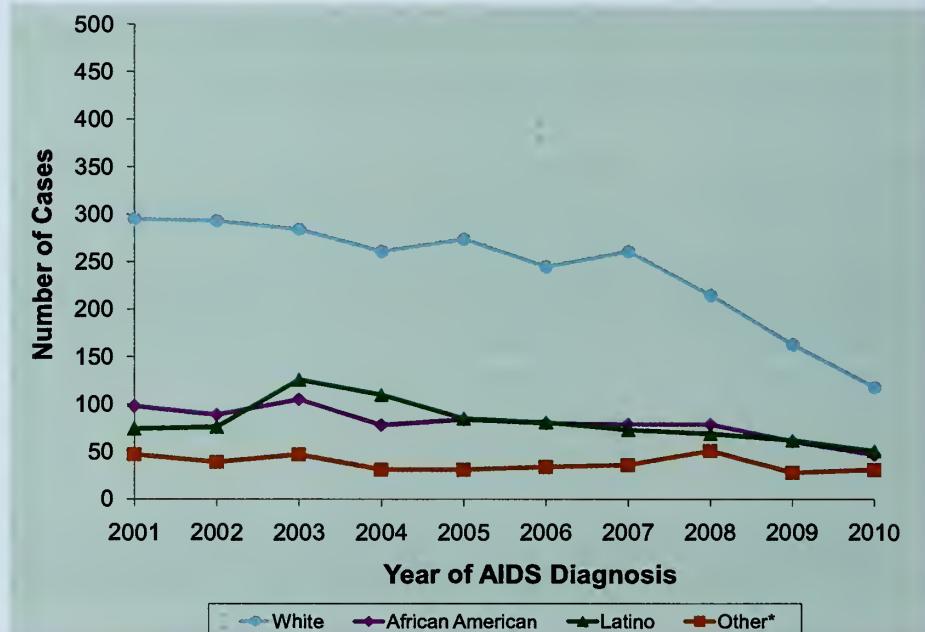
2

Trends in HIV/AIDS Diagnosis

Race/ethnicity

In absolute numbers, AIDS cases in San Francisco have occurred predominantly among whites (Figure 2.1). The number of white AIDS cases has declined over the last 10 years. The number of African American AIDS cases also declined from 2001, but has been level between 2004 and 2008. The trend for Latino AIDS cases shows a period of slight increase until 2003 and a decline thereafter. AIDS case counts for recent years are subject to delays in reporting, particularly for 2010.

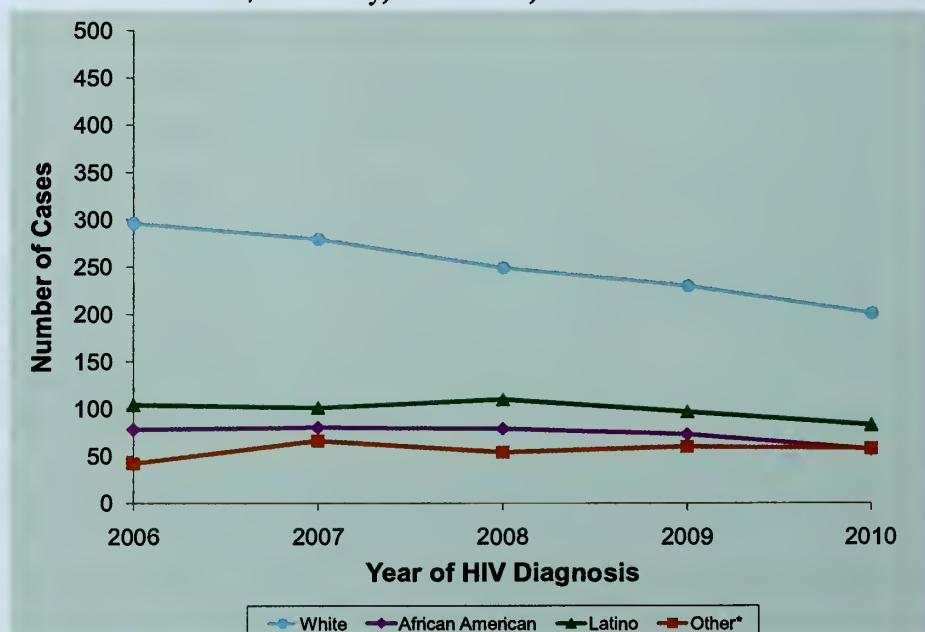
Figure 2.1 Number of AIDS cases by race/ethnicity, 2001-2010, San Francisco



* Cases in the “Other” race/ethnicity category include 72% Asian/Pacific Islanders, 9% Native Americans, and 18% Multi-race.

Trends by race/ethnicity category for cases diagnosed with HIV infection show that, from 2006 to 2010, whites accounted for the majority of diagnosed cases (Figure 2.2). The number of white HIV/AIDS cases declined in this time period, while the number of HIV/AIDS cases for other race/ethnicity groups remained level.

Figure 2.2 Number of cases diagnosed with HIV infection[#] by race/ethnicity, 2006-2010, San Francisco



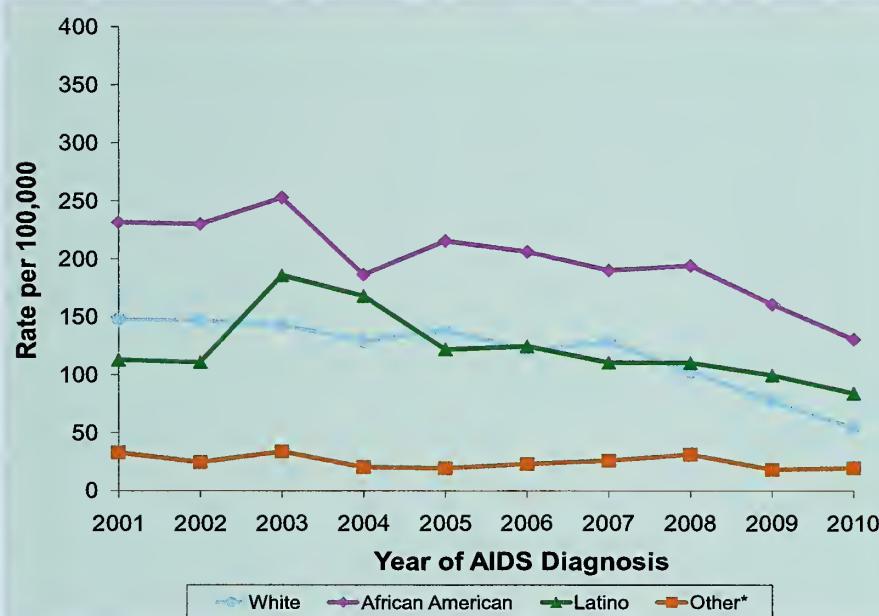
Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

* Cases in the “Other” race/ethnicity category include 73% Asian/Pacific Islanders, 5% Native Americans, and 18% Multi-race.

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Since 2001, the annual AIDS rates among African American men have been higher than for men of all other race/ethnicity groups (Figure 2.3). The AIDS rates for white men and Latino men have been similar since 2005. In 2010, the rate of AIDS per 100,000 population was 131 among African American men, 54 for white men, and 84 for Latino men. Delays in reporting result in under-estimation of rates for recent years, particularly for 2010.

Figure 2.3 Annual rates[#] of male AIDS cases per 100,000 population by race/ethnicity, 2001-2010, San Francisco

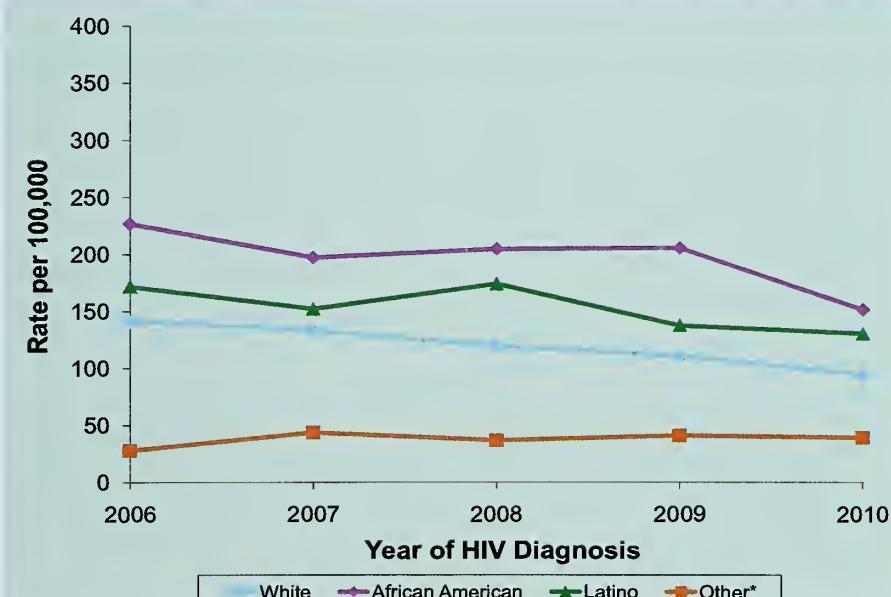


See Technical Notes "HIV/AIDS Case Rates."

* Cases in the "Other" race/ethnicity category include 72% Asian/Pacific Islanders, 8% Native Americans, and 18% Multi-race.

Among men, the rates of cases diagnosed with HIV infection are highest in African Americans. There was a declining trend in rates of diagnosed HIV infection for white men during 2006 to 2010, while HIV rates for men of other race/ethnicity groups remained fairly level in this time period (Figure 2.4). In 2010, the rate of diagnosed HIV infection per 100,000 population was 151 among African American men, 130 among Latino men, and 94 among white men.

Figure 2.4 Annual rates[#] of male cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2010, San Francisco



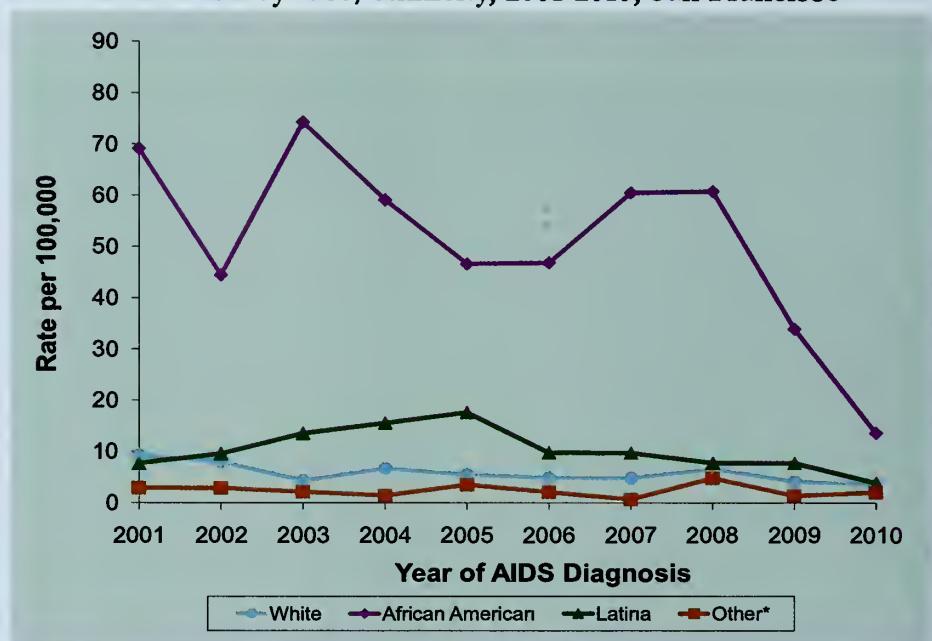
See Technical Notes "HIV/AIDS Case Rates." Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

* Cases in the "Other" race/ethnicity category include 72% Asian/Pacific Islanders, 5% Native Americans, and 18% Multi-race.

Trends in HIV/AIDS Diagnosis

AIDS rates among women are much lower than among men. Throughout the epidemic, African American women have been more affected by AIDS than women of other race/ethnicity groups (Figure 2.5). In 2010, the AIDS rate per 100,000 population was 14 for African American women, 4 for Latino women, 4 for white women, and 2 for women of other race/ethnicity groups.

Figure 2.5 Annual rates[#] of female AIDS cases per 100,000 population by race/ethnicity, 2001-2010, San Francisco

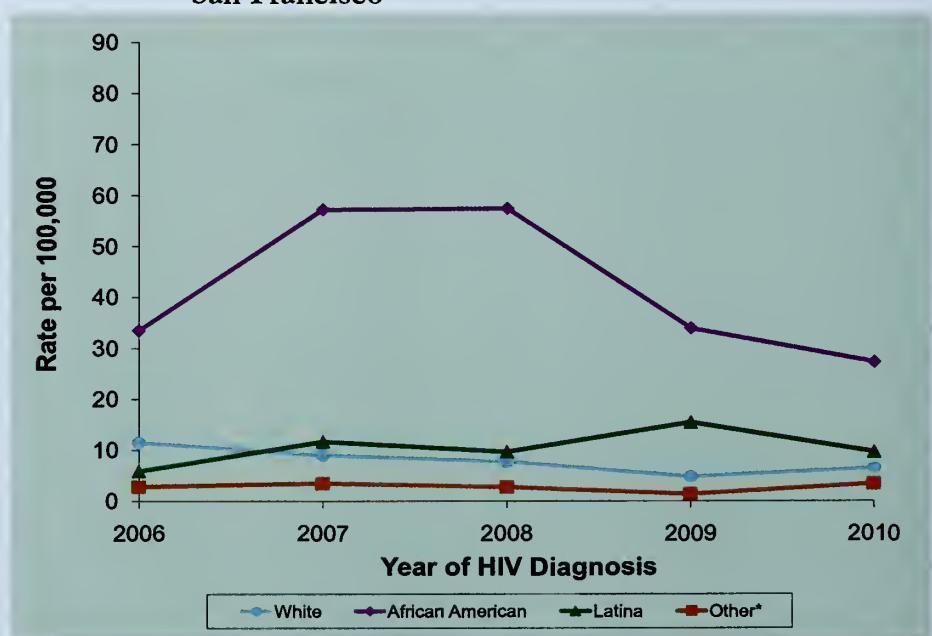


See Technical Notes "HIV/AIDS Case Rates."

* Cases in the "Other" race/ethnicity category include 71% Asian/Pacific Islanders, 12% Native Americans, and 18% Multi-race.

From 2006 to 2010, the rates of cases diagnosed with HIV were highest for African American women (Figure 2.6). Rates for African American women increased during 2007 and 2008, and rates for Latinas increased over the entire time period. Rates for white women decreased throughout the time period. In 2010, the rate of diagnosed HIV infection per 100,000 population was 27 for African American women, 10 for Latino women, 6 for white women, and 3 for women of other race/ethnicity groups.

Figure 2.6 Annual rates[#] of female cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2010, San Francisco



See Technical Notes "HIV/AIDS Case Rates." Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

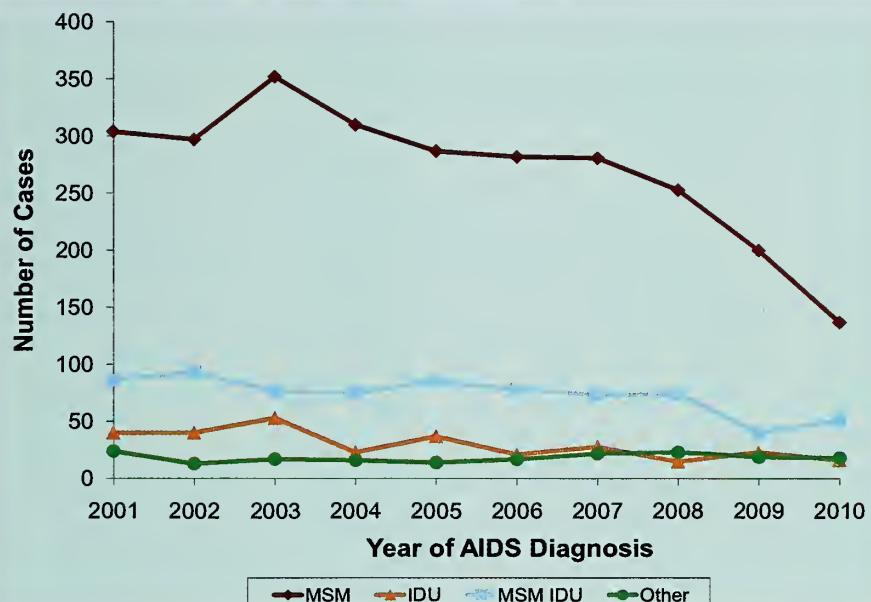
* Cases in the "Other" race/ethnicity category include 75% Asian/Pacific Islanders, 4% Native Americans, and 15% Multi-race.

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Exposure category

Most of the male AIDS cases in San Francisco have occurred among MSM. The number of cases among MSM has decreased between 2001 and 2010 (Figure 2.7). For MSM IDU the number of AIDS cases was fairly stable between 2003 and 2008. In 2010, 62% of male AIDS cases were MSM, 23% were MSM IDU, and 7% were heterosexual IDU.

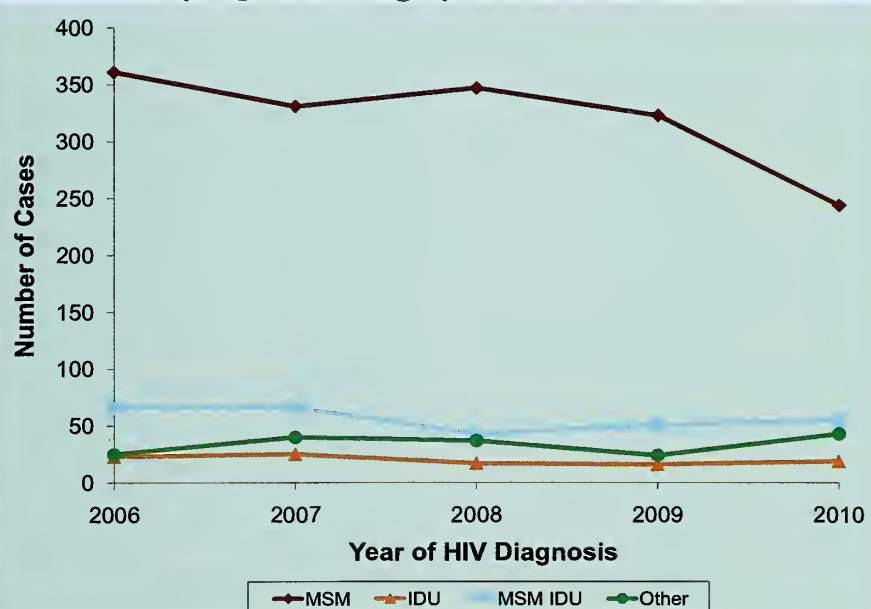
Figure 2.7 Number of male AIDS cases* by exposure category, 2001-2010, San Francisco



* Excludes male-to-female transgender AIDS cases.

In recent years, trends in the number of male cases diagnosed with HIV infection for most exposure categories were relatively stable (Figure 2.8). The number of MSM IDU HIV cases declined in 2008 and increased after that. In 2010, 68% of male HIV cases were MSM, 15% were MSM IDU, and 5% were heterosexual IDU.

Figure 2.8 Number of male cases diagnosed with HIV infection* by exposure category, 2006-2010, San Francisco

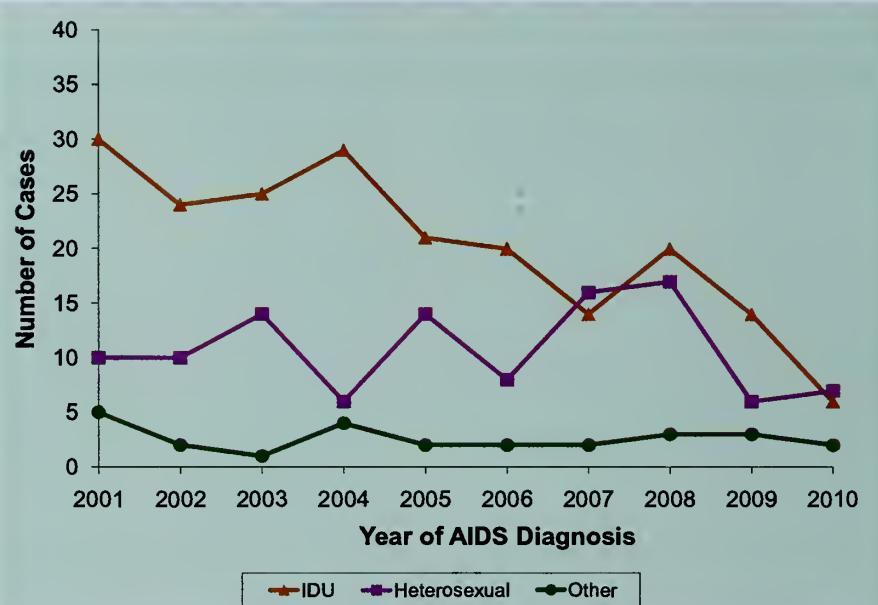


* Excludes male-to-female transgender cases diagnosed with HIV infection. Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Trends in HIV/AIDS Diagnosis

Injection drug use is the predominant exposure category for female AIDS cases, followed by heterosexual contact. The number of female IDU cases has declined since 2001 and were similar to female heterosexual non-IDU cases in 2007 and 2008. Female AIDS cases due to heterosexual contact and other exposure categories have remained relatively stable. In 2010, 40% of female cases were due to injection drug use and 47% were attributed to heterosexual contact (Figure 2.9).

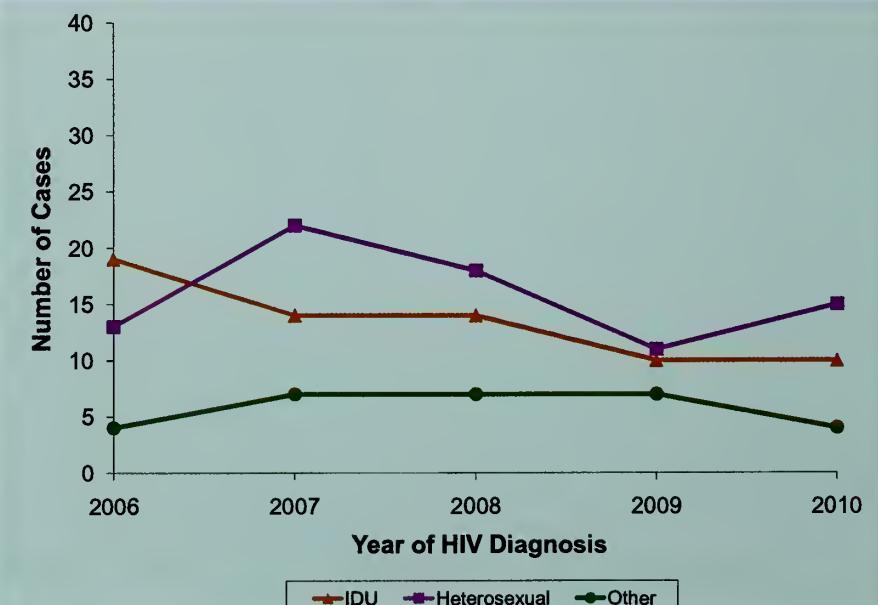
Figure 2.9 Number of female AIDS cases* by exposure category, 2001-2010, San Francisco



* Excludes female-to-male transgender AIDS cases.

When female cases diagnosed with HIV infection are examined, the number of female IDU cases and female cases due to heterosexual contact are similar (Figure 2.10). In 2007, the number of annual female cases diagnosed with HIV infection due to heterosexual contact overtook the number of female IDU cases. This is more similar to nationwide trends, where heterosexual contact is the leading exposure category for female HIV/AIDS cases.

Figure 2.10 Number of female cases diagnosed with HIV infection* by exposure category, 2006-2010, San Francisco



* Excludes female-to-male transgender cases diagnosed with HIV infection. Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Age

Cumulatively, the largest number of men, women, and transwomen with AIDS were diagnosed between ages 30 and 39 years (Table 2.1). Younger persons (under the age of 30) made up a larger proportion of female and transfemale AIDS cases than male AIDS cases.

For cases diagnosed in 2007-2010, there was an increase in the proportion of women diagnosed with AIDS in the 50+ year age group. The proportions of men diagnosed in the 20-29 years and over 40 year age groups increased from 1999 to 2010. The proportions of transfemale persons diagnosed in the over 40 year age group and in the under 30 year age group increased in 2007-2010 compared to the previous time period.

Table 2.1 AIDS cases by gender and age at diagnosis, diagnosed 1999-2010, San Francisco

	1999-2002		2003-2006		2007-2010		Cumulative Totals	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in Years)								
0 - 19	3	(<1)	5	(<1)	4	(<1)	49	(<1)
20 - 29	146	(8)	140	(8)	151	(12)	3,047	(11)
30 - 39	789	(42)	581	(33)	355	(28)	12,038	(44)
40 - 49	646	(34)	647	(37)	482	(38)	8,648	(32)
50+	303	(16)	370	(21)	281	(22)	3,385	(12)
Male Subtotal	1,887	(100)	1,743	(100)	1,273	(100)	27,167	(100)
Female (Age in Years)								
0 - 19	4	(2)	0	(0)	1	(1)	24	(2)
20 - 29	24	(13)	19	(13)	11	(10)	166	(14)
30 - 39	64	(35)	43	(29)	28	(25)	457	(38)
40 - 49	60	(33)	55	(38)	28	(25)	361	(30)
50+	30	(16)	29	(20)	42	(38)	203	(17)
Female Subtotal	182	(100)	146	(100)	110	(100)	1,211	(100)
Transfemale* (Age in Years)								
0 - 29	11	(15)	7	(10)	12	(29)	97	(23)
30 - 39	34	(46)	32	(48)	9	(22)	183	(44)
40+	29	(39)	28	(42)	20	(48)	135	(32)
Transfemale Subtotal	74	(100)	67	(100)	41	(100)	415	(100)

* Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Trends in HIV/AIDS Diagnosis

Table 2.2 shows cases diagnosed with HIV infection by the age at HIV diagnosis and year of HIV diagnosis. The largest proportion of males was diagnosed with HIV between the ages of 30 and 39 years. In 2010, the proportions of male cases diagnosed with HIV in the 20-29 years group, 30-39 years group, and 40-49 years group were very similar. For female cases, the proportion diagnosed in the 50+ year age group increased in this time period. In 2009 and 2010, the majority of female cases were diagnosed in the over 40 year age groups.

Although the number of transfemale persons diagnosed each year is small, transfemale cases diagnosed with HIV infection appear younger than male and female HIV and AIDS cases at the time of HIV diagnosis.

Table 2.2 Cases diagnosed with HIV infection* by gender and age at diagnosis, diagnosed 2007-2010, San Francisco

	2007		2008		2009		2010	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Male (Age in Years)								
0 - 19	8	(2)	10	(2)	4	(1)	4	(1)
20 - 29	121	(26)	98	(22)	98	(24)	100	(28)
30 - 39	169	(37)	165	(37)	126	(31)	108	(30)
40 - 49	112	(24)	128	(29)	121	(29)	102	(28)
50+	52	(11)	42	(9)	64	(15)	46	(13)
Male Subtotal	462	(100)	443	(100)	413	(100)	360	(100)
Female (Age in Years)								
0 - 19	0	(0)	2	(5)	0	(0)	0	(0)
20 - 29	8	(19)	12	(31)	5	(18)	5	(17)
30 - 39	13	(30)	11	(28)	7	(25)	4	(14)
40 - 49	17	(40)	9	(23)	3	(11)	11	(38)
50+	5	(12)	5	(13)	13	(46)	9	(31)
Female Subtotal	43	(100)	39	(100)	28	(100)	29	(100)
Transfemale[#] (Age in Years)								
0 - 29	8	(38)	6	(60)	7	(37)	5	(50)
30+	13	(62)	4	(40)	12	(63)	5	(50)
Transfemale Subtotal	21	(100)	10	(100)	19	(100)	10	(100)

* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

3

Persons Living with HIV/AIDS

The number of persons living with HIV/AIDS continues to increase due to ongoing incidence of HIV combined with an increase in survival after AIDS diagnosis. Persons were counted as living in a year if their HIV diagnosis date was in or before that year and they were known to be alive at the end of the year. As of December 31, 2010, 15,861 San Francisco residents were living with HIV/AIDS (Table 3.1). Demographic and risk characteristics of persons living with HIV/AIDS remained mostly stable between 2007 and 2010; the largest numbers are white, age 50+ years, and MSM (including MSM IDU). Age 50+ was the fastest growing age category of persons living with HIV/AIDS, rising from 37% to 45% between 2007 and 2010. This increase most likely reflects improved survival from use of antiretroviral therapy.

Table 3.1 Trends in persons living with HIV/AIDS by demographic and risk characteristics, 2007-2010*, San Francisco

	2007		2008		2009		2010	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
Gender								
Male	13,964	(92)	14,186	(92)	14,378	(92)	14,597	(92)
Female	880	(6)	890	(6)	899	(6)	911	(6)
Transfemale [#]	343	(2)	341	(2)	353	(2)	353	(2)
Race/Ethnicity								
White	9,677	(64)	9,768	(63)	9,837	(63)	9,943	(63)
African American	2,099	(14)	2,116	(14)	2,138	(14)	2,160	(14)
Latino	2,348	(15)	2,429	(16)	2,502	(16)	2,563	(16)
Asian/Pacific Islander	722	(5)	757	(5)	791	(5)	825	(5)
Native American	95	(1)	95	(1)	96	(1)	99	(1)
Other/Unknown	246	(2)	252	(2)	266	(2)	271	(2)
Age in Years (at end of each year)								
0 - 19	36	(<1)	34	(<1)	26	(<1)	26	(<1)
20 - 29	635	(4)	632	(4)	624	(4)	595	(4)
30 - 39	2,740	(18)	2,582	(17)	2,371	(15)	2,163	(14)
40 - 49	6,153	(41)	6,081	(39)	5,996	(38)	5,895	(37)
50+	5,623	(37)	6,088	(39)	6,613	(42)	7,182	(45)
Exposure Category								
MSM	10,956	(72)	11,176	(72)	11,369	(73)	11,535	(73)
IDU	1,151	(8)	1,137	(7)	1,135	(7)	1,142	(7)
MSM IDU	2,243	(15)	2,220	(14)	2,215	(14)	2,227	(14)
Heterosexual	421	(3)	447	(3)	454	(3)	473	(3)
Transfusion/Hemophilia	33	(<1)	33	(<1)	32	(<1)	30	(<1)
Other/Unidentified	383	(3)	404	(3)	425	(3)	454	(3)
Total	15,187		15,417		15,630		15,861	

* Persons living with HIV/AIDS at the end of each year.

Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Person Living with HIV/AIDS

As of December 31, 2010, a total of 9,682 persons were living with AIDS in San Francisco (Table 3.2). Ninety-two percent were male, 6% were female, and 2% were transfemale. Among men, the majority of cases were white. MSM accounted for the largest proportion of living male AIDS cases within all racial/ethnic groups.

For the first time, in 2010 the majority of person living with AIDS were over 50 years old (52%). More than half of white and African American living male AIDS cases were age 50 years and over. By comparison, Latino, Asian Pacific Islander, and Native American men living with AIDS were younger, with the majority between the ages of 40 and 49 years old.

Among women living with AIDS, African American was the largest racial/ethnic group (43%) followed by white (30%). The most frequent exposure categories for living female AIDS cases were injection drug use and heterosexual contact. Similar to living male AIDS cases, the majority of living female AIDS cases were age 50 years and over.

Table 3.2 Persons living with AIDS* by gender, exposure category, age and race/ethnicity, December 2010, San Francisco

	White Number (%)	African American Number (%)	Latino Number (%)	Asian/Pacific Islander & Native American Number (%)	Total Number*
Male					
Exposure category					
MSM	4,766 (81)	541 (52)	1,158 (81)	379 (80)	6,892
IDU	174 (3)	211 (20)	51 (4)	21 (4)	461
MSM IDU	910 (15)	217 (21)	164 (11)	52 (11)	1,363
Heterosexual	16 (<1)	42 (4)	33 (2)	8 (2)	101
Other	4 (<1)	4 (<1)	4 (<1)	6 (1)	19
No reported risk	33 (1)	28 (3)	22 (2)	8 (2)	92
Age in Years (at end of 2010)					
<13	0 (0)	0 (0)	1 (0)	0 (0)	2
13 - 19	0 (0)	1 (0)	0 (0)	0 (0)	1
20 - 29	49 (1)	16 (2)	48 (3)	15 (3)	131
30 - 39	393 (7)	82 (8)	217 (15)	73 (15)	785
40 - 49	2,008 (34)	373 (36)	617 (43)	205 (43)	3,235
50+	3,453 (58)	571 (55)	549 (38)	181 (38)	4,774
Male Subtotal	5,903	1,043	1,432	474	8,928
Female					
Exposure category					
IDU	106 (64)	156 (66)	37 (38)	13 (29)	318
Heterosexual	45 (27)	66 (28)	49 (51)	25 (56)	185
Other	5 (3)	7 (3)	6 (6)	3 (7)	21
No reported risk	9 (5)	9 (4)	5 (5)	4 (9)	28
Age in Years (at end of 2010)					
13 - 19	0 (0)	2 (1)	3 (3)	1 (2)	6
20 - 29	3 (2)	8 (3)	5 (5)	2 (4)	18
30 - 39	18 (11)	27 (11)	18 (19)	10 (22)	75
40 - 49	71 (43)	67 (28)	30 (31)	17 (38)	187
50+	73 (44)	134 (56)	41 (42)	15 (33)	266
Female Subtotal	165	238	97	45	552
Transfemale[#]	46	68	61	25	202
Total	6,114	1,349	1,590	544	9,682

* Includes persons who were San Francisco residents at time of HIV diagnosis and progressed to AIDS while they were a resident in another jurisdiction.

Includes persons with multiple race or whose race/ethnicity information is not available.

† Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

As of December 31, 2010, 6,179 living HIV non-AIDS cases (persons living with HIV who had not developed AIDS) had been diagnosed in San Francisco (Table 3.3). Demographic and risk characteristics for living HIV non-AIDS cases were similar to living AIDS cases. Ninety-two percent were male, 6% were female, and 2% were transfemale. The majority of living male HIV non-AIDS cases were white and MSM. The majority of living female HIV non-AIDS cases were African American and IDU. Among men, persons between 40-49 years old accounted for the largest number of living HIV cases. Among women, persons between 40-49 years old and 50 years and over accounted for similar proportions of living HIV cases.

Table 3.3 Persons living with HIV non-AIDS by gender, exposure category, age and race/ethnicity, December 2010, San Francisco

	White Number (%)	African American Number (%)	Latino Number (%)	Asian/Pacific Islander & Native American Number (%)	Total Number*
Male					
<i>Exposure Category</i>					
MSM	3,020 (82)	357 (59)	718 (82)	282 (85)	4,467
IDU	85 (2)	93 (15)	17 (2)	5 (2)	202
MSM IDU	483 (13)	84 (14)	80 (9)	34 (10)	699
Heterosexual	12 (<1)	26 (4)	13 (1)	1 (0)	53
Other	3 (<1)	2 (<1)	3 (<1)	1 (0)	9
No reported risk	93 (3)	45 (7)	40 (5)	8 (2)	239
<i>Age in Years (at end of 2010)</i>					
13 - 19	3 (<1)	5 (1)	1 (0)	0 (0)	9
20 - 29	174 (5)	59 (10)	94 (11)	38 (11)	378
30 - 39	622 (17)	105 (17)	255 (29)	116 (35)	1,147
40 - 49	1,513 (41)	176 (29)	358 (41)	127 (38)	2,231
50+	1,384 (37)	262 (43)	163 (19)	50 (15)	1,904
Male Subtotal	3,696	607	871	331	5,669
Female					
<i>Exposure Category</i>					
IDU	58 (56)	66 (44)	20 (34)	8 (27)	158
Heterosexual	24 (23)	58 (39)	23 (39)	17 (57)	128
Other	3 (3)	1 (1)	3 (5)	0 (0)	9
No reported risk	18 (17)	24 (16)	13 (22)	5 (17)	64
<i>Age in Years (at end of 2010)</i>					
<13	0 (0)	1 (1)	2 (3)	0 (0)	3
13 - 19	1 (1)	0 (0)	2 (3)	0 (0)	5
20 - 29	7 (7)	16 (11)	11 (19)	2 (7)	37
30 - 39	27 (26)	15 (10)	9 (15)	6 (20)	60
40 - 49	41 (40)	45 (30)	18 (31)	11 (37)	120
50+	27 (26)	72 (48)	17 (29)	11 (37)	134
Female Subtotal	103	149	59	30	359
Transfemale[#]	30	55	43	19	151
Total	3,829	811	973	380	6,179

* Includes persons with multiple race or whose race/ethnicity information is not available.

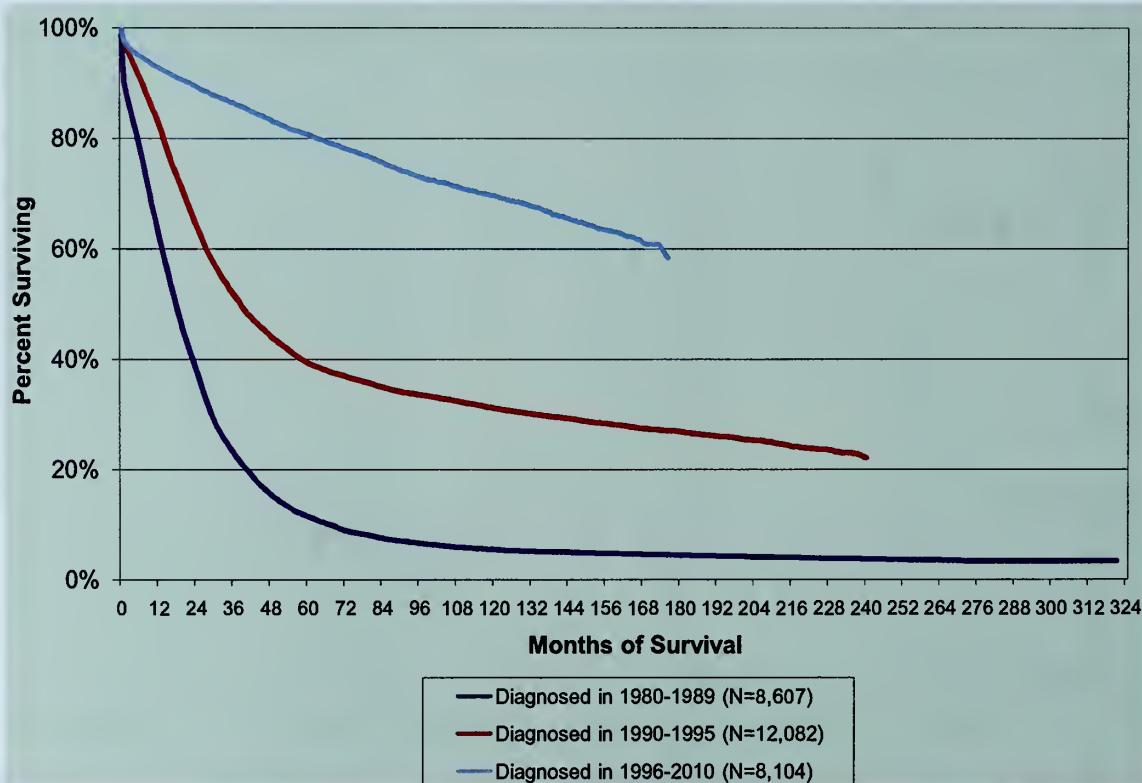
Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

4

Survival among Persons with AIDS

The Kaplan-Meier survival curves in Figure 4.1 demonstrate that survival improved for San Francisco AIDS cases between 1996 and 2010, compared to persons diagnosed in earlier time periods. Survival was poor for persons diagnosed in the first ten years of the AIDS epidemic (1980-1989) with 50% cases surviving 18 months (median survival time) after AIDS diagnosis. Between 1990 and 1995, survival improved; median survival time was 38 months. Approximately 58% of persons diagnosed with AIDS between 1996 and 2010 are still alive as of December 31, 2010. Improved survival among persons diagnosed with AIDS after 1995 is attributed to more effective antiretroviral therapies.

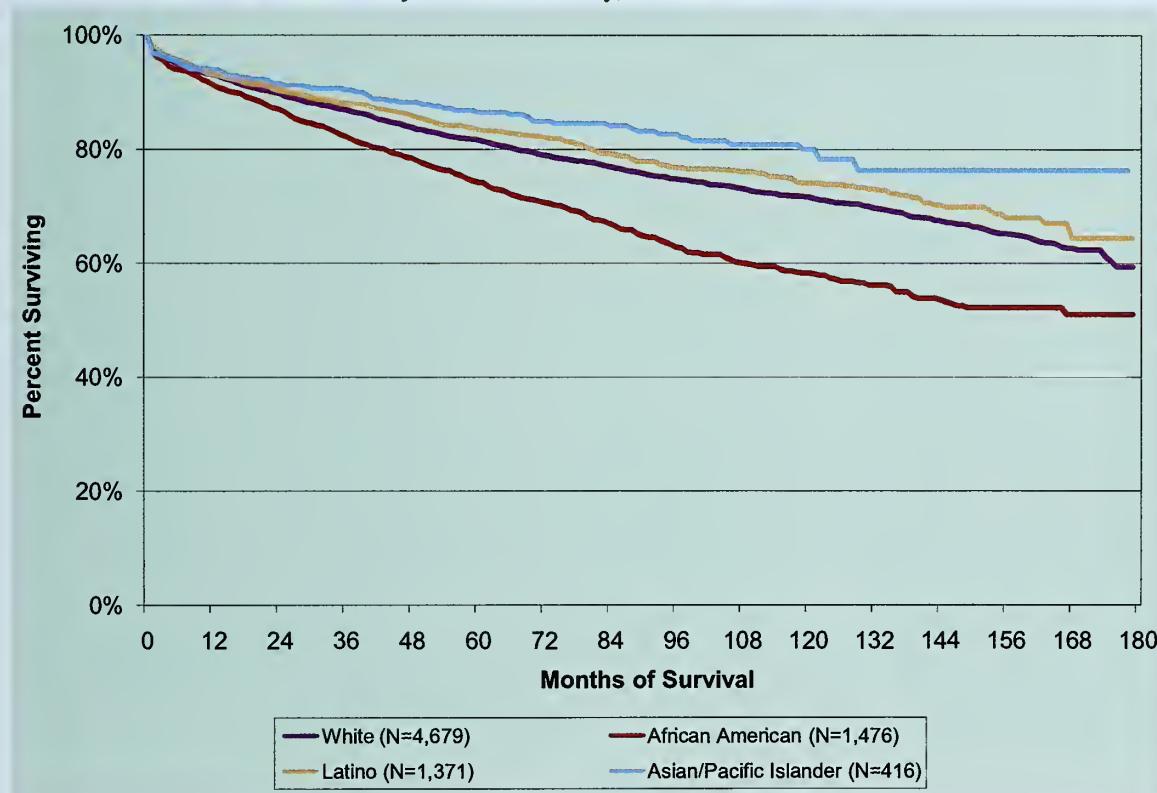
Figure 4.1 Kaplan-Meier survival* curves for persons diagnosed with AIDS in 1980-1989, 1990-1995, and 1996-2010, San Francisco



* See Technical Notes "AIDS Survival."

Survival after AIDS diagnosis is worse for African Americans than other race/ethnic groups (Figure 4.2). Among persons diagnosed between 1996 and 2010, the percent of African Americans surviving 60 months (5 years) after AIDS was 74%, compared to 82% for whites, 84% for Latinos, and 86% for Asian/Pacific Islanders.

Figure 4.2 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2010 by race/ethnicity, San Francisco



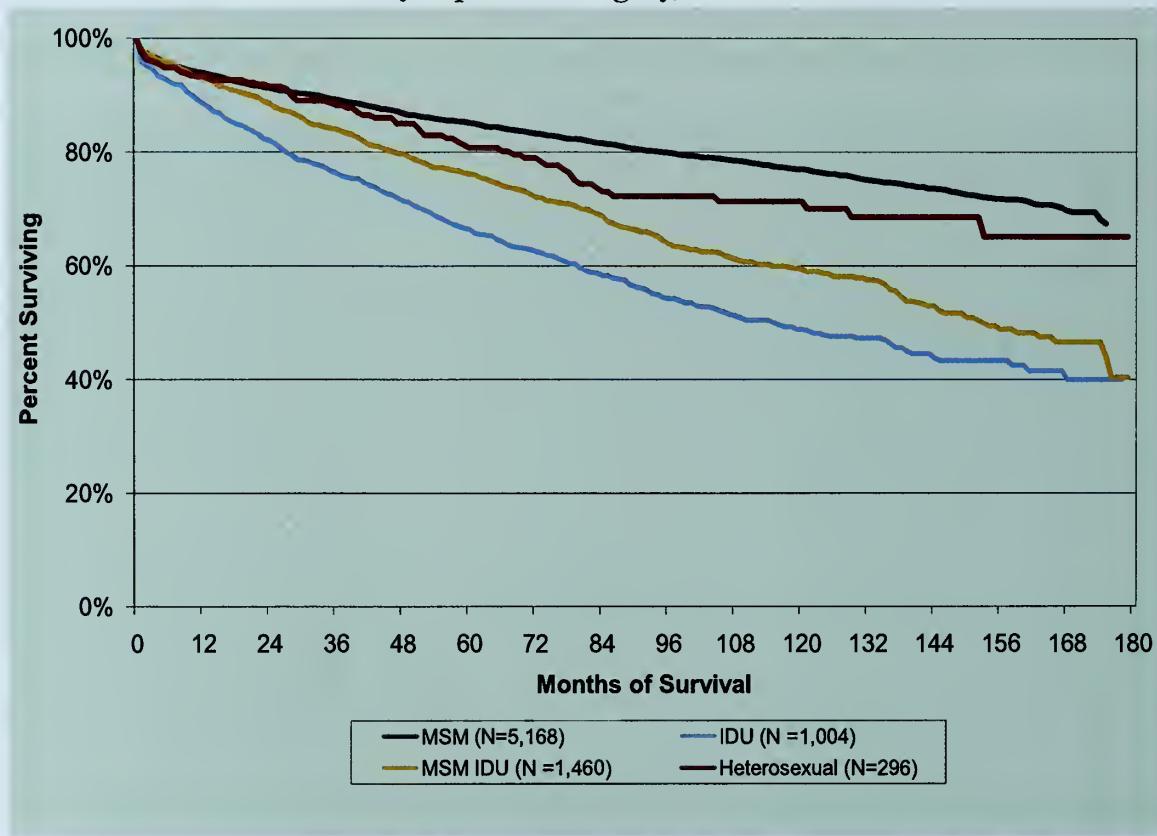
* See Technical Notes "AIDS Survival."

Survival among Persons with AIDS

Survival after AIDS diagnosis has been better for MSM and heterosexuals compared to MSM IDU and heterosexual IDU. For AIDS cases diagnosed in 1996 to 2010, the 5-year (60 months) survival was 85% for MSM, 81% for heterosexuals, 76% for MSM IDU, and 66% for heterosexual IDU (Figure 4.3).

Worse survival among IDU partly reflects higher death rates from causes associated with drug use such as overdose, liver disease, and other infections.

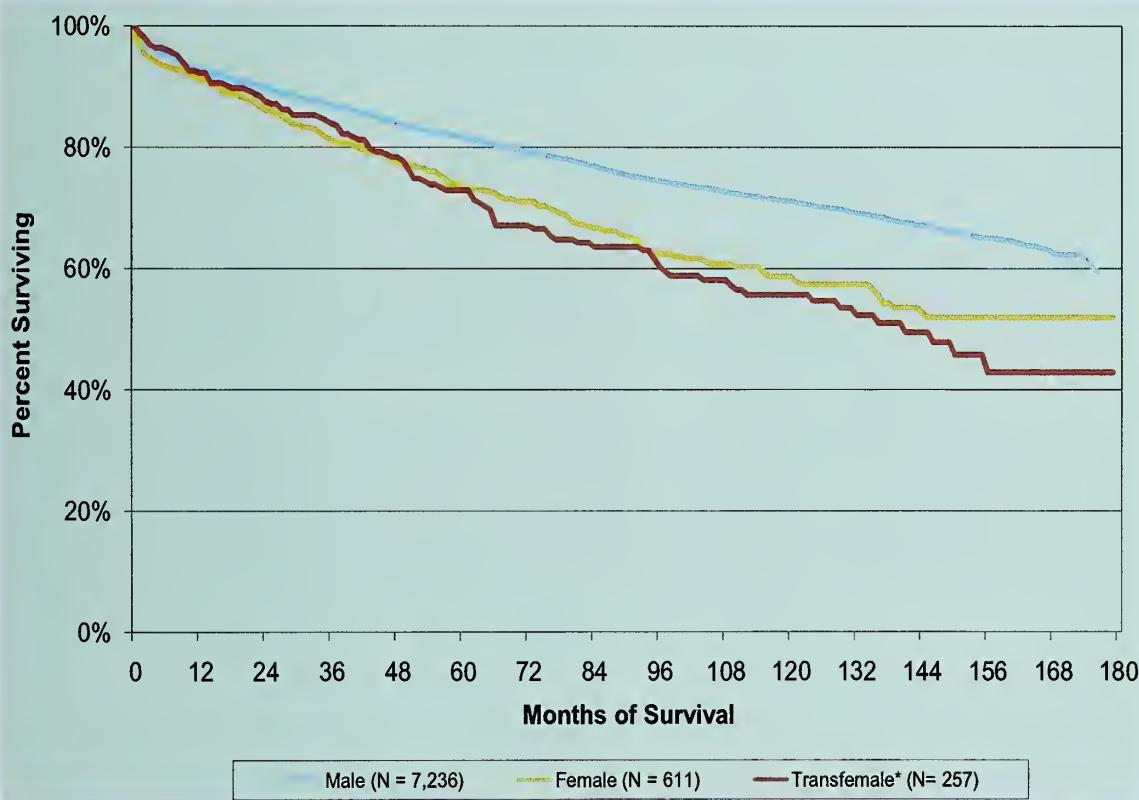
Figure 4.3 Kaplan-Meier survival* curves for persons diagnosed with AIDS between 1996 and 2010 by exposure category, San Francisco



* See Technical Notes "AIDS Survival."

By gender, male AIDS cases have better survival than female and transfemale AIDS cases. The Kaplan-Meier curves show that female and transfemale AIDS cases have similar survival (Figure 4.4). The 5-year (60 months) survival was 82% for men, 73% for women and 73% for transfemale persons. The differences in survival by gender are consistent with lower use of highly active antiretroviral therapies among female and transfemale AIDS cases.

Figure 4.4 Kaplan-Meier survival[#] curves for persons diagnosed with AIDS between 1996 and 2010 by gender, San Francisco



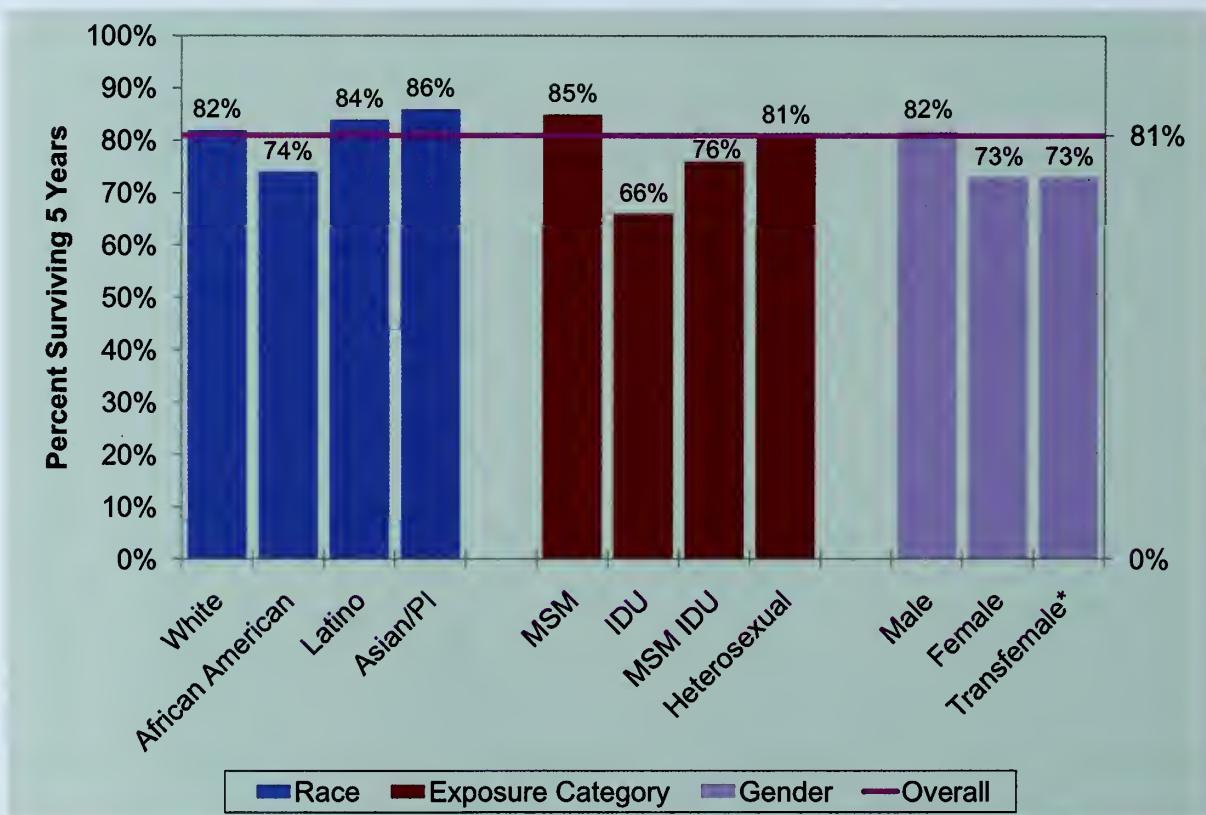
See Technical Notes "AIDS Survival."

* Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Survival among Persons with AIDS

The overall five-year survival after AIDS for persons diagnosed with AIDS between 1996 and 2009 is 81% (Figure 4.5). Differences in survival occurred across race/ethnicity, exposure category, and gender groups. African Americans, IDU, MSM IDU, women, and transfemale persons with AIDS have lower proportions surviving five years compared to other groups.

Figure 4.5 Proportion surviving five years after AIDS for persons diagnosed with AIDS between 1996 and 2010 by race/ethnicity, exposure category, and gender, San Francisco



5

Trends in HIV/AIDS Mortality

HIV/AIDS surveillance data

As of December 31, 2010, a total of 19,341 deaths have occurred among San Francisco AIDS cases since the beginning of the epidemic (Table 5.1). Reporting of deaths for recent years is not yet complete. The number of AIDS deaths was fairly stable across gender, race/ethnicity, and exposure categories between 2007 and 2008. Cumulatively, numbers of deaths in the 30-39 year old age group and 40-49 year old age group are similar. However, in recent years, the largest number of deaths has shifted to the 50-59 year old age group.

Table 5.1 Deaths in persons with AIDS, by demographic and risk characteristics, 2007-2010, San Francisco

	Year of Death*					Cumulative Totals as of 12/31/2010	
	2007		2008		2009		
	Number	(%)	Number	(%)	Number	(%)	
Gender							
Male	236	(88)	192	(84)	188	(92)	115 (85) 18,446
Female	19	(7)	24	(11)	11	(5)	13 (10) 677
Transfemale [#]	14	(5)	12	(5)	6	(3)	8 (6) 218
Race/Ethnicity							
White	162	(60)	141	(62)	139	(68)	73 (54) 14,328
African American	58	(22)	53	(23)	37	(18)	28 (21) 2,331
Latino	36	(13)	23	(10)	19	(9)	20 (15) 1,988
Other	13	(5)	11	(5)	10	(5)	15 (11) 694
Exposure Category							
MSM	143	(53)	117	(51)	119	(58)	65 (48) 14,427
IDU	45	(17)	37	(16)	22	(11)	17 (13) 1,419
MSM IDU	73	(27)	62	(27)	55	(27)	41 (30) 3,017
Heterosexual	7	(3)	5	(2)	6	(3)	8 (6) 195
Other/Unidentified	1	(0)	7	(3)	3	(1)	5 (4) 283
Age at Death (years)							
0 - 29	5	(2)	4	(2)	4	(2)	3 (2) 1,077
30 - 39	24	(9)	15	(7)	18	(9)	6 (4) 7,181
40 - 49	91	(34)	83	(36)	59	(29)	33 (24) 7,236
50 - 59	87	(32)	83	(36)	72	(35)	56 (41) 2,791
60+	62	(23)	43	(19)	52	(25)	38 (28) 1,056
Total	269	(100)	228	(100)	205	(100)	136 (100) 19,341

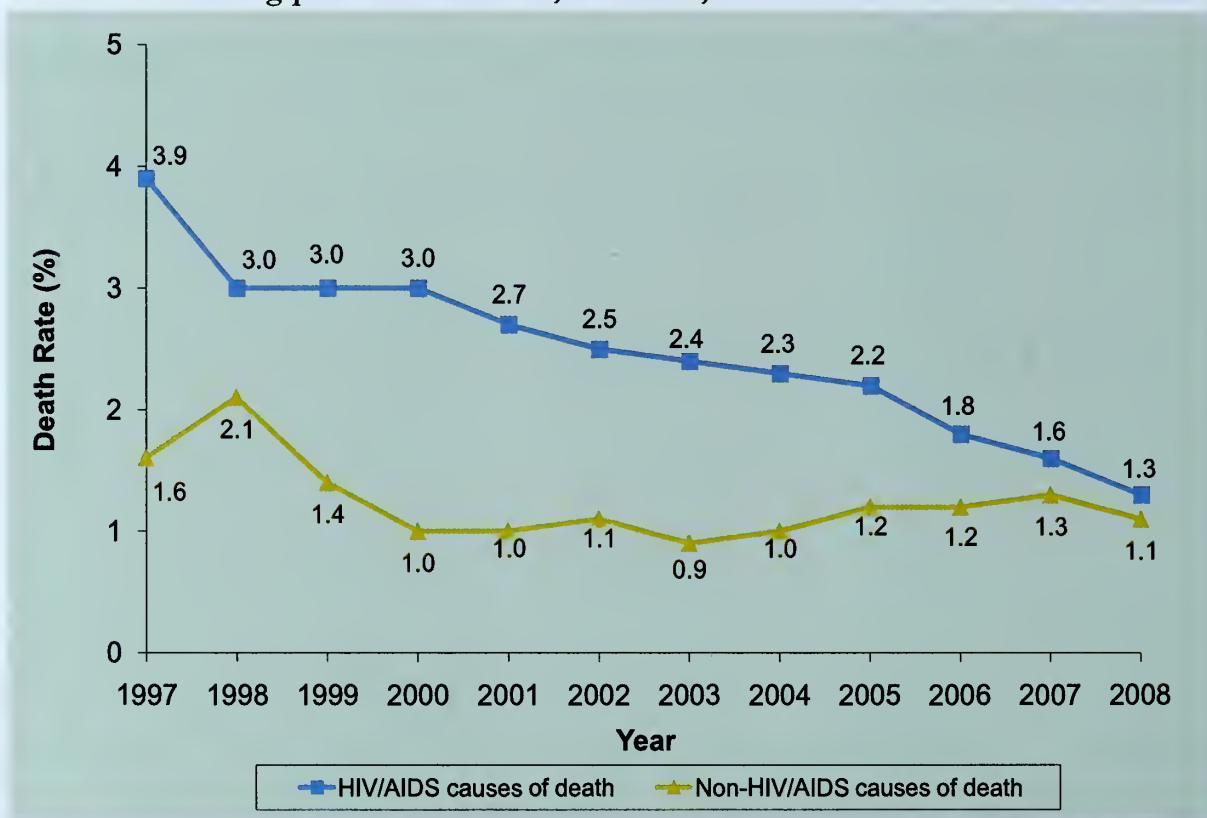
* Data in recent years are incomplete due to reporting delay. In addition, deaths that occurred outside of San Francisco are primarily identified through matching with the National Death Index (NDI) which is complete only through 2008.

Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Trends in HIV/AIDS Mortality

The trend in death rates in persons with AIDS was examined by the single, underlying cause of death for each person. The death rate due to HIV/AIDS-related causes declined from 3.9 per 100 persons with AIDS in 1997 to 1.3 per 100 persons with AIDS in 2008 (Figure 5.1). For non-HIV/AIDS-related causes of death, the trend shows a slight increase beginning with 0.9 per 100 persons in 2003 to 1.3 per 100 persons in 2007.

Figure 5.1 Death rates* due to HIV/AIDS-related and non-HIV/AIDS-related causes among persons with AIDS, 1997-2008, San Francisco



* Death rates are calculated as the number of persons with AIDS who died each year divided by the number of total AIDS cases for that year. See Technical Notes for "Causes of Death."

The proportion of deaths in which HIV/AIDS was listed as the underlying cause of death decreased from 68% of AIDS deaths occurring in 1997-2000 to 58% in 2005-2008 (Table 5.2). Other frequently occurring underlying causes of death in 2005-2008 include non-AIDS cancer (10%), heart disease (7%), drug overdose (5.3%), suicide (3.2%), and mental disorders due to substance use (2.6%). The proportions of these non-HIV/AIDS-related causes increased over the three time periods.

Table 5.2 Underlying causes of death among persons with AIDS*, 1997-2008, San Francisco

Underlying Cause of Death [#]	Year of Death					
	1997-2000 N=1,472		2001-2004 N= 1,194		2005-2008 N= 1,071	
	Number	(%)	Number	(%)	Number	(%)
HIV/AIDS	1,004	(68.2)	847	(70.9)	625	(58.4)
Non-AIDS cancer	86	(5.8)	85	(7.1)	107	(10.0)
Lung cancer	22	(1.5)	26	(2.2)	38	(3.5)
Liver cancer	16	(1.1)	12	(1.0)	21	(2.0)
Anal cancer	6	(0.4)	5	(0.4)	6	(0.6)
Heart disease	61	(4.1)	62	(5.2)	75	(7.0)
Coronary heart disease	28	(1.9)	43	(3.6)	34	(3.2)
Cardiomyopathy	12	(0.8)	5	(0.4)	7	(0.7)
Drug overdose	46	(3.1)	28	(2.3)	57	(5.3)
Suicide	28	(1.9)	20	(1.7)	34	(3.2)
Mental disorders due to substance use	9	(0.6)	19	(1.6)	28	(2.6)
Chronic obstructive lung disease	13	(0.9)	18	(1.5)	20	(1.9)
Liver disease	25	(1.7)	30	(2.5)	19	(1.8)
Liver cirrhosis	11	(0.7)	15	(1.3)	10	(0.9)
Alcoholic liver disease	12	(0.8)	11	(0.9)	8	(0.7)
Viral hepatitis	44	(3.0)	7	(0.6)	8	(0.7)
Renal disease	5	(0.3)	1	(0.1)	7	(0.7)
Cerebrovascular disease	13	(0.9)	12	(1.0)	5	(0.5)
Septicemia	7	(0.5)	4	(0.3)	3	(0.3)
Pancreatitis	7	(0.5)	3	(0.3)	1	(0.1)
Pneumonia	14	(1.0)	0	(0.0)	0	(0.0)
Aspergillosis	16	(1.1)	0	(0.0)	0	(0.0)

* Deceased AIDS cases without cause of death information are not represented in this table.

See Technical Notes "Causes of Death."

Trends in HIV/AIDS Mortality

Table 5.3 shows both underlying and contributory causes of death among persons with AIDS. In the first two time periods, the proportion of deaths with HIV/AIDS-related causes was stable at 86%, with the proportion falling to 72% of AIDS deaths in 2005-2008. The relative contribution of several causes of death appeared level between time periods 2001-2004 and 2005-2008 (coronary heart disease, anal cancer, cerebrovascular disease, aspergillosis). Deaths due to non-AIDS cancer showed the largest percentage increase between recent time periods 2001-2004 and 2005-2008. The proportions of deaths related to substance abuse (drug overdose and mental disorders due to substance use) also increased.

Table 5.3 Multiple causes of death among persons with AIDS*, 1997-2008, San Francisco

Multiple Causes of Death [#]	Year of Death					
	1997-2000 N=1,472		2001-2004 N= 1,194	2005-2008 N= 1,071		
	No.	(%)	No.	(%)	No.	(%)
HIV/AIDS	1,258	(85.5)	1,028	(86.1)	769	(71.8)
Heart disease	268	(18.2)	247	(20.7)	187	(17.5)
Coronary heart disease	45	(3.1)	71	(5.9)	62	(5.8)
Cardiomyopathy	33	(2.2)	25	(2.1)	13	(1.2)
Non-AIDS cancer	134	(9.1)	121	(10.1)	147	(13.7)
Lung cancer	25	(1.7)	29	(2.4)	39	(3.6)
Liver cancer	21	(1.4)	14	(1.2)	22	(2.1)
Anal cancer	9	(0.6)	9	(0.8)	8	(0.7)
Liver disease	181	(12.3)	194	(16.2)	109	(10.2)
Liver cirrhosis	61	(4.1)	85	(7.1)	53	(4.9)
Alcoholic liver disease	17	(1.2)	14	(1.2)	9	(0.8)
Pneumonia	213	(14.5)	179	(15.0)	103	(9.6)
Viral hepatitis	129	(8.8)	178	(14.9)	100	(9.3)
Renal disease	96	(6.5)	116	(9.7)	95	(8.9)
Septicemia	134	(9.1)	129	(10.8)	92	(8.6)
Mental disorders due to substance use	54	(3.7)	76	(6.4)	89	(8.3)
Drug overdose	59	(4.0)	34	(2.8)	65	(6.1)
Chronic obstructive lung disease	42	(2.9)	58	(4.9)	48	(4.5)
Suicide	28	(1.9)	20	(1.7)	34	(3.2)
Cerebrovascular disease	39	(2.6)	32	(2.7)	29	(2.7)
Aspergillosis	33	(2.2)	7	(0.6)	6	(0.6)

* Deceased AIDS cases without cause of death information are not represented in this table.

Includes underlying and contributory causes of death. Individuals may have more than one cause of death. See Technical Notes "Causes of Death."

Since 1997, the median age at death among persons with AIDS has increased over time, from 44 years in 1997-2000 to 50 years in 2005-2008 (Table 5.4). For select, frequent underlying causes of death among persons with AIDS, the median age at death increased across the three time periods for all causes of death. The increase in survival, attributed to improved treatment for HIV disease, contributes to the increases in the median age at death for both HIV-related and non-HIV-related causes by virtue of persons living long enough to acquire other conditions.

Table 5.4 Median age at death among persons with AIDS by underlying cause of death, 1997-2008, San Francisco

Underlying Cause of Death*	Year of Death		
	1997-2000	2001-2004	2005-2008
	Median Age (Years)		
HIV/AIDS	44.0	46.0	49.0
Non-AIDS cancer	49.0	53.0	55.0
Heart disease	49.0	51.0	56.0
Drug overdose	42.0	46.5	48.0
Suicide	42.0	44.0	48.5
All deaths	44.0	47.0	50.0

* See Technical Notes "Causes of Death."

Trends in HIV/AIDS Mortality

HIV/AIDS-related deaths were the leading cause of death for AIDS cases in all age groups from 1997-2008 (Table 5.5). From 2001-2004, all age groups except those aged 50-59 experienced the highest proportions of HIV/AIDS deaths compared to the other time periods. Persons aged 50 and over have seen higher numbers of HIV/AIDS deaths over time as people are living longer. Despite these increases, the proportion of deaths attributable to HIV/AIDS has decreased with time. Non-AIDS cancer and heart disease continue to trail HIV/AIDS as the two leading causes of death among those over 50. The proportion of HIV/AIDS deaths has declined with older age. Drug overdose and suicide contribute to higher proportion of deaths over time among those under the age of 40.

Table 5.5 Leading underlying causes of death among persons with AIDS by age group, 1997-2008, San Francisco

Age at Death (Years)	Year of Death					
	1997-2000		2001-2004		2005-2008	
	Underlying Cause	Number (%)	Underlying Cause	Number (%)	Underlying Cause	Number (%)
Under 30	1. HIV/AIDS	31 (73.8)	1. HIV/AIDS	17 (89.5)	1. HIV/AIDS	9 (75.0)
	2. Suicide	2 (4.8)	2. Suicide	2 (10.5)	2. Suicide	2 (16.7)
	2. Pneumonia	2 (4.8)				
30-39	1. HIV/AIDS	288 (72.9)	1. HIV/AIDS	186 (78.2)	1. HIV/AIDS	67 (62.6)
	2. Drug overdose	16 (4.1)	2. Heart disease	8 (3.4)	2. Drug overdose	10 (9.4)
	3. Heart disease	13 (3.3)	3. Drug overdose	6 (2.5)	3. Suicide	6 (5.6)
	4. Non-AIDS cancer	12 (3.0)	3. Suicide	6 (2.5)	4. Mental disorders*	4 (3.7)
	5. Suicide	9 (2.3)	5. Non-AIDS cancer	5 (2.1)	4. Non-AIDS cancer	4 (3.7)
40-49	1. HIV/AIDS	443 (67.9)	1. HIV/AIDS	380 (75.0)	1. HIV/AIDS	264 (63.8)
	2. Non-AIDS cancer	36 (5.5)	2. Heart disease	21 (4.1)	2. Non-AIDS cancer	34 (8.2)
	3. Viral hepatitis	25 (3.8)	3. Non-AIDS cancer	20 (3.9)	3. Drug overdose	24 (5.8)
	4. Drug overdose	24 (3.7)	4. Drug overdose	17 (3.4)	4. Heart disease	16 (3.9)
	5. Heart disease	20 (3.1)	5. Liver disease	14 (2.8)	5. Mental disorders*	15 (3.6)
50-59	1. HIV/AIDS	188 (65.7)	1. HIV/AIDS	185 (60.3)	1. HIV/AIDS	200 (56.8)
	2. Non-AIDS cancer	26 (9.1)	2. Non-AIDS cancer	41 (13.4)	2. Non-AIDS cancer	35 (9.9)
	3. Heart disease	18 (6.3)	3. Heart disease	21 (6.8)	3. Heart disease	33 (9.4)
	4. Viral hepatitis	12 (4.2)	4. Liver disease	11 (3.6)	4. Drug overdose	20 (5.7)
	5. Liver disease	5 (1.8)	5. COPD#	10 (3.3)	5. COPD#	12 (3.4)
					5. Suicide	12 (3.4)
60 and over	1. HIV/AIDS	54 (55.7)	1. HIV/AIDS	78 (63.4)	1. HIV/AIDS	85 (45.5)
	2. Non-AIDS cancer	11 (11.3)	2. Non-AIDS cancer	19 (15.5)	2. Non-AIDS cancer	34 (18.2)
	3. Heart disease	10 (10.3)	3. Heart disease	12 (9.8)	3. Heart disease	23 (12.3)
	4. COPD#	6 (6.2)	4. COPD#	5 (4.1)	4. Liver disease	4 (2.1)
	5. Suicide	2 (2.1)	5. Cerebrovascular	3 (2.4)	5. Accident	3 (1.6)
	5. Drug overdose	2 (2.1)	disease		5. COPD#	3 (1.6)
	5. Cerebrovascular	2 (2.1)			5. Drug overdose	3 (1.6)
	disease				5. Viral hepatitis	3 (1.6)
					5. Renal disease	3 (1.6)

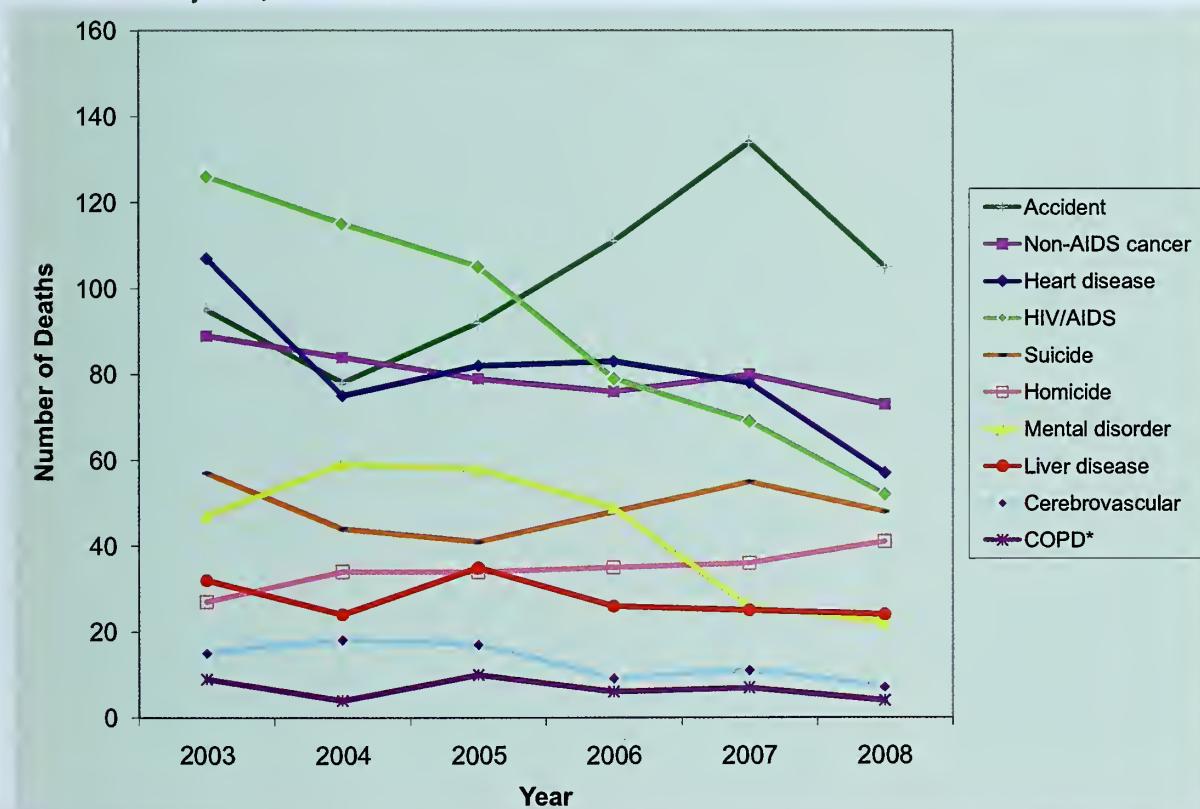
* Mental disorders due to substance use.

COPD: Chronic obstructive pulmonary disease.

Vital statistics death data

We examined data obtained from the California Vital Statistics Death Files for San Francisco residents who died from 2003 to 2008 to compare the number of deaths and death rates by gender, race/ethnicity and age. The leading cause of death was determined using ICD-10 codes representing the underlying cause of death, which is consistent with the National Vital Statistics Reports. Until 2005, HIV/AIDS had been the leading cause of death for men aged 25-54 years in San Francisco (Figure 5.2). However, accidents surpassed HIV/AIDS to become the leading cause of death from 2006 to 2008. Other leading causes of death that have increased over HIV/AIDS in recent years were heart disease and non-AIDS cancers. HIV/AIDS was the fourth leading cause of death in 2008 among male residents.

Figure 5.2 Leading causes of death among San Francisco male residents aged 25-54 years, 2003-2008

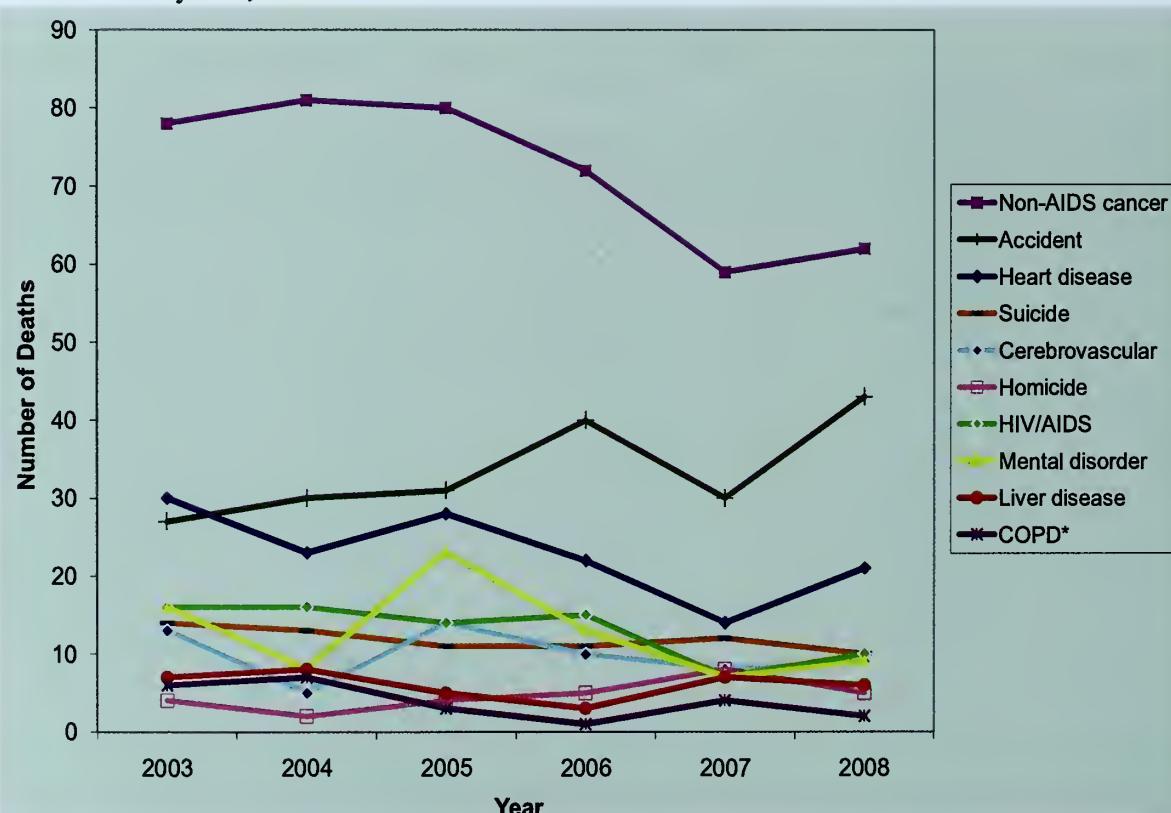


* COPD: chronic obstructive pulmonary disease.

Trends in HIV/AIDS Mortality

Deaths due to HIV/AIDS among San Francisco women were significantly lower than among men. Among those aged 25-54 years in 2008, the number of deaths among males due to HIV/AIDS (N=52) (Figure 5.2) was approximately five times higher than the number of deaths among females (N=10) (Figure 5.3). HIV/AIDS-related deaths were steady from 2003 through 2008 but decreased in 2007 (Figure 5.3). Non-AIDS cancer remained the leading cause of death for female residents aged 25-54 years from 2003 through 2008, with most of these deaths due to breast cancer.

Figure 5.3 Leading causes of death among San Francisco female residents aged 25-54 years, 2003-2008

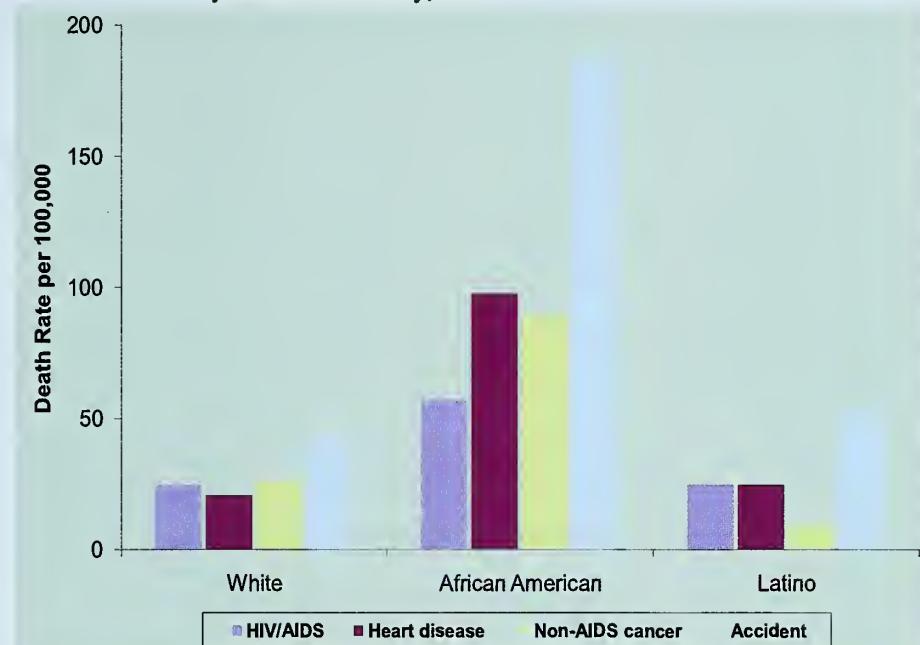


* COPD: chronic obstructive pulmonary disease.

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In 2008, African American males aged 25-54 years had higher death rates from the top four leading causes of death than did Latino and white men aged 25-54 years (Figure 5.4). The greatest disparities were observed for deaths due to accidents. The HIV/AIDS death rate for African American men (57 per 100,000) was about two times the death rate among white men and Latino men (25 per 100,000).

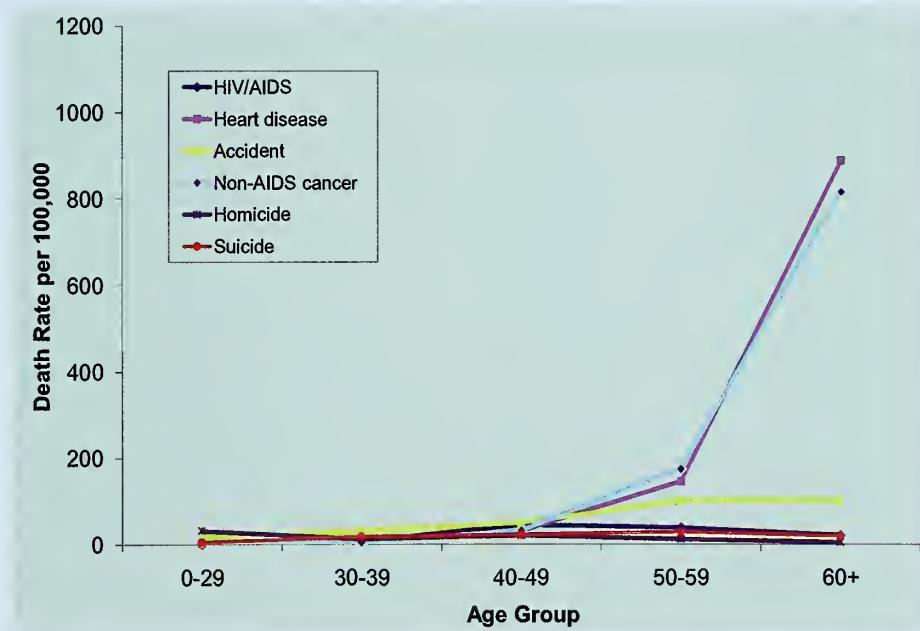
Figure 5.4 Leading causes of death rates per 100,000 population among San Francisco male residents* aged 25-54 years by race/ethnicity, 2008



* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file.

Figure 5.5 illustrates the age-specific death rates among male San Francisco residents. The HIV/AIDS-related death rate reached its highest among those aged 40-49 (45 per 100,000). The leading cause of death among the 40-49 years age group was accident (49 per 100,000). In 2008, homicide was the leading cause of death among those under 30 years old, and accident was the leading cause of death for those aged 30-39 years and 40-49 years. Men over 50 died at a dramatically higher rate due to chronic conditions such as heart disease and non-AIDS cancer.

Figure 5.5 Leading causes of death rates per 100,000 population among San Francisco male residents* by age group, 2008



* Population denominator obtained from State of California, Department of Finance, Race/Ethnic Population with Age and Sex detail 2000-2050 data file.

6

Opportunistic Illnesses among Adults and Adolescents with AIDS

To be diagnosed with AIDS, an HIV-infected adult or adolescent must have been diagnosed with one or more AIDS-defining opportunistic illnesses or a CD4 count of less than 200 cells/ μL or less than 14 percent of total lymphocytes. Every adult or adolescent reported with AIDS to the San Francisco Department of Public Health (SFDPH) must meet at least one of these criteria. Most opportunistic illnesses occur in persons whose CD4 cell count is below 200 cells/ μL . As such, most persons who are diagnosed with an AIDS opportunistic illness also have a low CD4 cell count. For the purposes of surveillance, adults or adolescents who meet the AIDS case definition because of one or more opportunistic illnesses will have these recorded as their AIDS-defining illness. Those who meet the AIDS case definition with a low CD4 cell count or percentage but without an opportunistic illness are considered to have AIDS solely because of reduced CD4 cells.

The SFDPH has collected the initial and subsequent occurrence of AIDS opportunistic illnesses since AIDS surveillance began in 1981. To our knowledge, the SFDPH is the only health department in the country to have done so. This provides us with a comprehensive understanding of the spectrum of opportunistic illnesses over time.

We examined trends in the initial AIDS defining diagnosis in three distinct time periods; the pre-highly active antiretroviral therapy (HAART) era (1993-1995), the early HAART era (1996-2000), and the late HAART era (2001-2010) (Table 6.1). Between 1993 and 2010, there were 13,504 adult and adolescent AIDS cases diagnosed. During all three time periods, over 70% of those cases met the case definition because of a low CD4 cell count or percentage in the absence of an opportunistic illness. This is because most opportunistic illnesses do not occur at CD4 counts above 200 cells/ μL . In the most recent years, over 80% of cases were diagnosed by CD4 levels alone. In all three time periods, *Pneumocystis jirovecii* pneumonia (PCP) was the most frequent opportunistic illness, followed by Kaposi's sarcoma. In the first two time periods, the third most frequent opportunistic illness was wasting syndrome but in the period 2001-2010, candidiasis of esophagus, bronchi, lungs or trachea was the third most frequently diagnosed opportunistic illness. Declines in opportunistic illnesses can be attributed to prophylaxis and improved antiretroviral therapy and to earlier diagnosis of HIV infection.

Table 6.1 Adult/adolescent AIDS cases, by initial AIDS-defining conditions and calendar period of AIDS diagnosis, 1993-2010, San Francisco

Initial AIDS-Defining Condition*	Pre-HAART	Early HAART	Late HAART	Total (N=13,504)
	1993-1995 (N=5,413)	1996-2000 (N=3,706)	2001-2010 (N=4,385)	
	Number (%)	Number (%)	Number (%)	
Initial AIDS-Defining Condition*				
Candidiasis of esophagus, bronchi, lungs, or trachea	113 (2.1)	91 (2.5)	81 (1.8)	285 (2.1)
Invasive cervical cancer	0 (0.0)	1 (0.0)	4 (0.1)	5 (0.0)
Coccidioidomycosis	1 (0.0)	1 (0.0)	1 (0.0)	3 (0.0)
Cryptococcosis	56 (1.0)	35 (0.9)	51 (1.2)	142 (1.1)
Cryptosporidiosis	74 (1.4)	47 (1.3)	16 (0.4)	137 (1.0)
Cytomegalovirus (except liver, spleen, lymph nodes)	35 (0.6)	26 (0.7)	18 (0.4)	79 (0.6)
Cytomegalovirus retinitis	20 (0.4)	11 (0.3)	9 (0.2)	40 (0.3)
HIV encephalopathy	60 (1.1)	37 (1.0)	28 (0.6)	125 (0.9)
Chronic herpes simplex virus	7 (0.1)	11 (0.3)	8 (0.2)	26 (0.2)
Histoplasmosis	4 (0.1)	7 (0.2)	6 (0.1)	17 (0.1)
Isosporiasis	4 (0.1)	4 (0.1)	3 (0.1)	11 (0.1)
Kaposi's sarcoma	226 (4.2)	155 (4.2)	131 (3.0)	512 (3.8)
Lymphoma, Burkitt's (non-Hodgkin's)	8 (0.1)	13 (0.4)	21 (0.5)	42 (0.3)
Lymphoma, immunoblastic (non-Hodgkin's)	47 (0.9)	46 (1.2)	34 (0.8)	127 (0.9)
CNS lymphoma	4 (0.1)	5 (0.1)	6 (0.1)	15 (0.1)
Mycobacterium avium complex	36 (0.7)	27 (0.7)	23 (0.5)	86 (0.6)
Mycobacterium tuberculosis, pulmonary	74 (1.4)	44 (1.2)	50 (1.1)	168 (1.2)
Mycobacterium tuberculosis, disseminated or extrapulmonary	32 (0.6)	22 (0.6)	13 (0.3)	67 (0.5)
Atypical mycobacterium	9 (0.2)	2 (0.1)	6 (0.1)	17 (0.1)
Pneumocystis jirovecii pneumonia	559 (10.3)	410 (11.1)	343 (7.8)	1,312 (9.7)
Recurrent bacterial pneumonia	77 (1.4)	80 (2.2)	31 (0.7)	188 (1.4)
Progressive multifocal leukoencephalopathy	4 (0.1)	3 (0.1)	5 (0.1)	12 (0.1)
Salmonella septicemia	0 (0.0)	1 (0.0)	0 (0.0)	1 (0.0)
Toxoplasmosis	21 (0.4)	20 (0.5)	15 (0.3)	56 (0.4)
Wasting syndrome	176 (3.3)	107 (2.9)	69 (1.6)	352 (2.6)
CD4 count <200 cells/ μ L or < 14 percent [#]	3,965 (73.2)	2,647 (71.4)	3,511 (80.1)	10,123 (75.0)

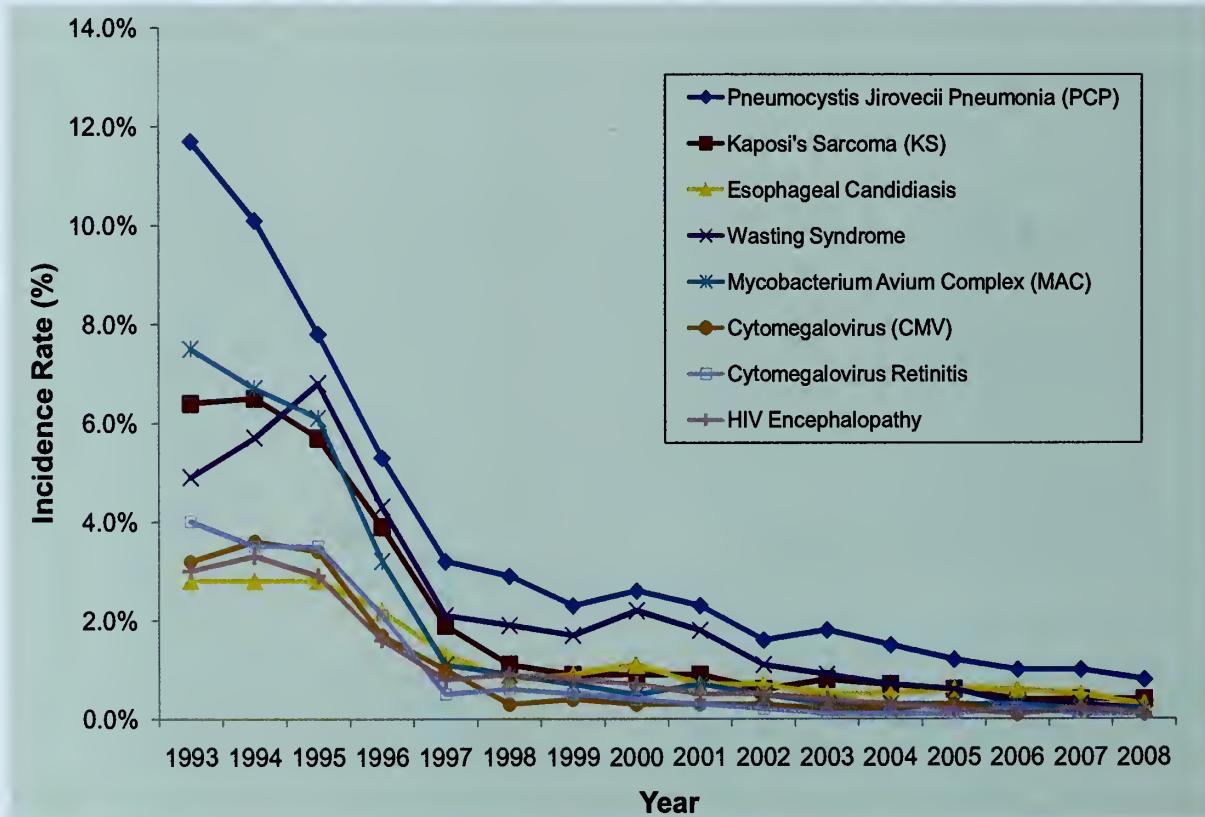
* Cases may have more than one initial AIDS-defining condition.

Cases whose initial AIDS defining condition is low CD4 count (or percent) only.

Opportunistic Illnesses among Adults and Adolescents with AIDS

Figure 6.1 shows the incidence rate of eight major opportunistic illnesses between 1993 and 2008. Dramatic declines in the most frequently occurring opportunistic illnesses are evident from this figure. Though more difficult to appreciate, there have also been declines in the less frequently occurring illnesses over this time period. It is important to note that reporting of opportunistic illnesses in most recent years may not be complete due to reporting delays. The decline in PCP in the early to mid-1990s can be attributed to widespread use of PCP prophylaxis. Declines in Mycobacterium Avium Complex are likely due to use of prophylaxis as well although this is more difficult to observe because of their relatively small numbers. Improved care, including HAART, is likely to be responsible for most of the decline.

Figure 6.1 Incidence rates* of opportunistic illnesses among adults and adolescents with AIDS, 1993-2008, San Francisco



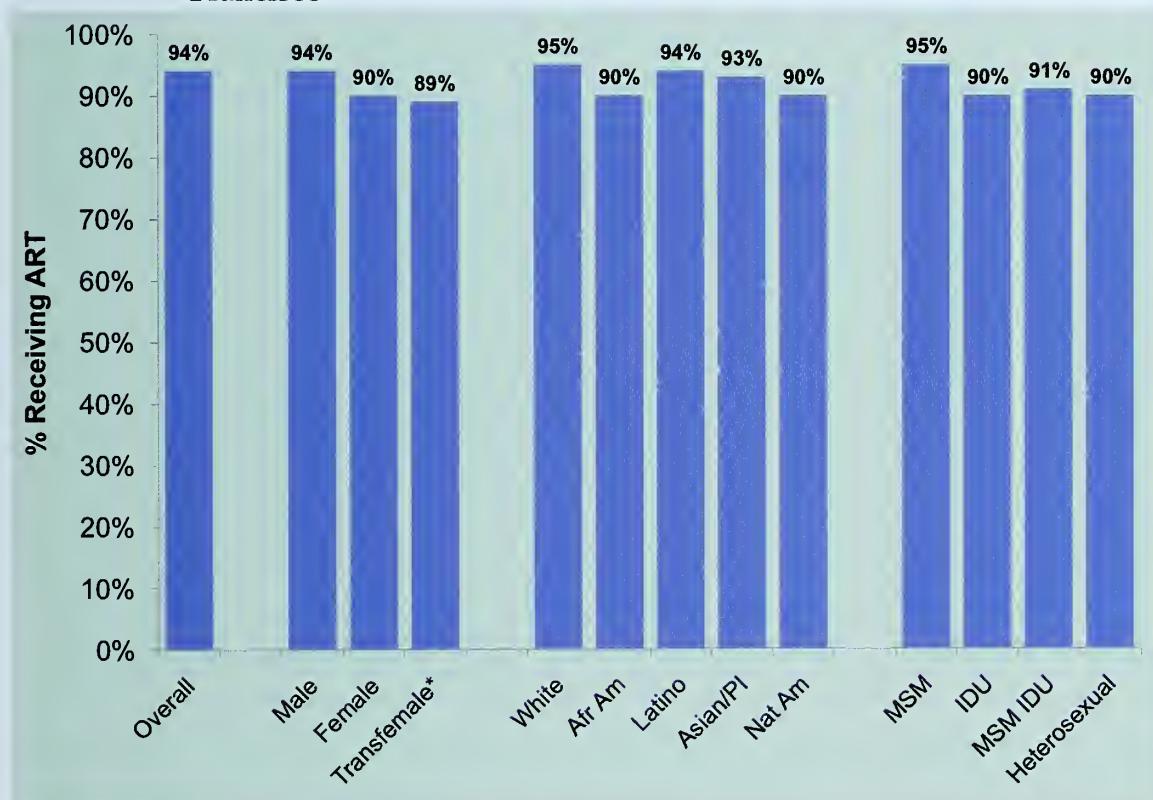
* See Technical Notes "Opportunistic Illness Incidence."

7

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Figure 7.1 shows an estimate of antiretroviral therapy (ART) use among persons living with AIDS as of December 31, 2010. Information on ART is obtained from medical chart review, and persons who have been prescribed ART are assumed to have received it. The percentage of ART use was calculated among persons who have had follow-up information within the last two years and are not known to have moved out of San Francisco (N=6,249). Overall, 94% of persons living with AIDS received ART. Although ART use was slightly lower among certain subgroups (females, transfemale persons, African Americans, Native Americans, injection drug users and heterosexuals), these data suggest ART coverage is relatively high among persons living with AIDS.

Figure 7.1 Estimate of antiretroviral therapy use[#] among persons living with AIDS by gender, race/ethnicity, and exposure category, December 2010, San Francisco



See Technical Notes “Estimate of ART Use.”

* Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes “Transgender Status.”

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Table 7.1 shows ART use among persons living with AIDS by neighborhood at time of AIDS diagnosis. Neighborhoods with lower ART use (<93%) included Visitacion Valley, Bayview, South of Market and Lake Merced. Persons who were homeless at time of AIDS diagnosis had the lowest ART use (82%).

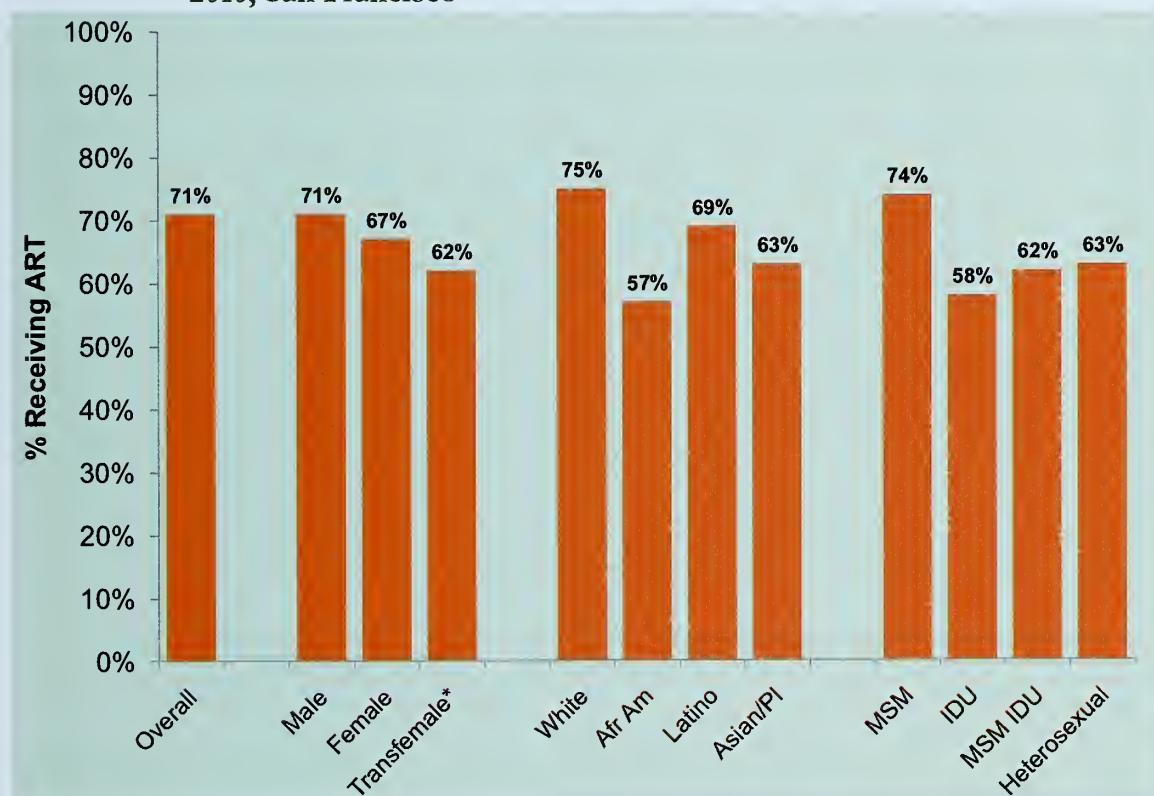
Table 7.1 Estimate of antiretroviral therapy use* among persons living with AIDS by neighborhood, December 2010, San Francisco

Neighborhood	Total Number	% Receiving ART
OUTER MISSION	85	98%
DIAMOND HEIGHTS	198	97%
MISSION	633	97%
CASTRO	1,083	96%
NOE VALLEY	167	96%
POTRERO HILL	101	96%
WESTERN ADDITION	802	96%
BERNAL HEIGHTS	153	95%
DOWNTOWN	175	95%
EXCELSIOR	97	95%
HAIGHT ASHBURY	168	95%
NOB HILL	167	95%
PACIFIC HEIGHTS	157	95%
TWIN PEAKS	130	95%
INGLESIDE	33	94%
RICHMOND	222	94%
SUNSET	148	93%
TENDERLOIN	662	93%
LAKE MERCED	26	92%
SOUTH OF MARKET	255	92%
BAYVIEW	160	91%
VISITACION VALLEY	63	89%
HOMELESS	383	82%

* See Technical Notes "Estimate of ART Use."

Figure 7.2 shows use of ART among persons living with HIV who have not progressed to AIDS. These estimates were calculated among those with follow-up information within the last two years (N=3,794). Overall, 71% of persons living with HIV non-AIDS received ART. Lower ART use in persons with HIV non-AIDS compared to persons with AIDS most likely reflects differences in recommendations regarding the optimal time to initiate ART. In addition, the disparity in ART use by demographic and risk characteristics is more prominent in this population compared to those with AIDS. Transfemal persons, African Americans and injection drug users have the lowest percentage receiving ART.

Figure 7.2 Estimate of antiretroviral therapy use[#] among persons living with HIV non-AIDS by gender, race/ethnicity[‡], and exposure category, December 2010, San Francisco



See Technical Notes "Estimate of ART Use."

‡ Information for Native Americans is not shown due to small numbers.

* Transfemal persons include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Use of Antiretroviral Therapy among Persons with HIV/AIDS

By neighborhood at time of HIV diagnosis, those with lower ART use (<64%) included Bayview, Nob Hill, Outer Mission, and Tenderloin (Table 7.2). Forty-four percent of homeless persons with HIV non-AIDS received ART.

Table 7.2 Estimate of antiretroviral therapy use* among persons living with HIV non-AIDS by neighborhood, December 2010, San Francisco

Neighborhood	Total Number	% Receiving ART
NOE VALLEY	103	84%
CASTRO	715	80%
LAKE MERCED	19	79%
HAIGHT ASHBURY	81	77%
DIAMOND HEIGHTS	132	73%
PACIFIC HEIGHTS	80	73%
VISITACION VALLEY	30	73%
WESTERN ADDITION	433	73%
MISSION	355	72%
TWIN PEAKS	87	72%
DOWNTOWN	108	71%
POTRERO HILL	59	71%
RICHMOND	117	71%
EXCELSIOR	30	70%
BERNAL HEIGHTS	84	69%
INGLESIDE	22	68%
SUNSET	100	68%
SOUTH OF MARKET	149	64%
BAYVIEW	75	63%
NOB HILL	68	63%
OUTER MISSION	52	63%
TENDERLOIN	320	63%
HOMELESS	208	44%

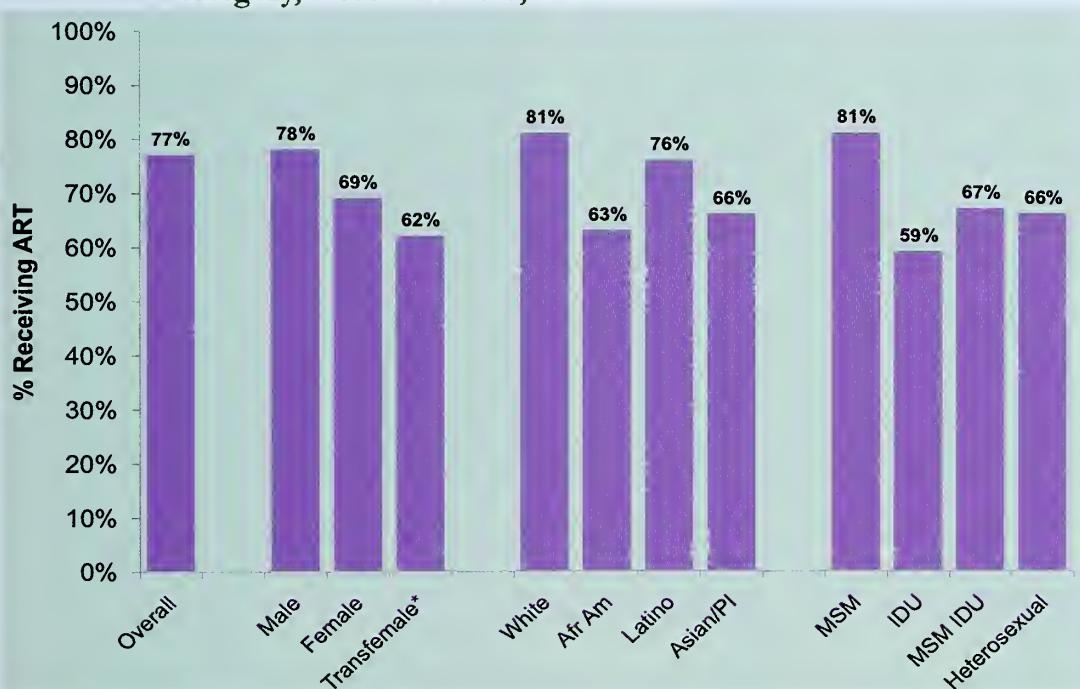
* See Technical Notes "Estimate of ART Use."

Prior to December 2009, treatment recommendations called for initiating ART in HIV infected persons who had a CD4 count less than 350 cells/ μ L. In December 2009, the U.S. Department of Health and Human Services updated the guidelines for ART to recommend that HIV-infected persons start ART when their CD4 count falls below 500 cells/ μ L. In April, 2010, the San Francisco Department of Public Health adopted a new policy recommending that health care providers discuss the advantages and disadvantages of initiating ART for all HIV-infected persons regardless of their CD4 count and provide ART to all patients who choose to begin therapy.

In order to provide a more accurate estimate of ART use among persons living with HIV non-AIDS, taking into account the change in the treatment guidelines in recent years, we calculated receipt of ART using a sample of cases (N=1,722) for whom a chart review was completed between January 2010 and February 2011 and the information of ART use is more complete. The ART use was 77% in this sample of HIV non-AIDS cases (Figure 7.3). The relative proportion of persons receiving ART stratified by gender, race/ethnicity, and risk was similar to the distribution of ART use among persons with HIV non-AIDS shown in Figure 7.2.

Although our data demonstrate differences in the proportion of persons prescribed ART by demographic characteristics, they do not tell us the reason for these findings. A number of explanations are possible including both patient and provider factors. These include risk of side effects, anticipated difficulties adhering to medications, current treatment for other conditions, and desire to delay ART until more severely ill.

Figure 7.3 Estimate of antiretroviral therapy use[#] in a sample of HIV non-AIDS cases with chart review by gender, race/ethnicity[‡], and exposure category, December 2010, San Francisco



See Technical Notes "Estimate of ART Use."

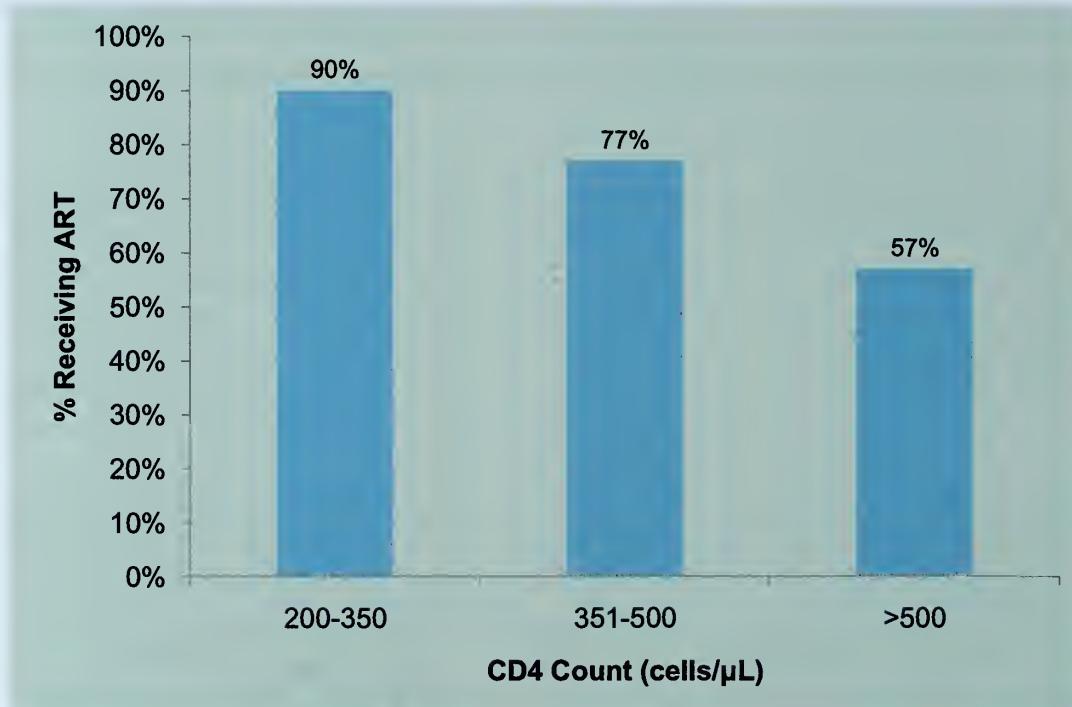
‡ Information for Native Americans is not shown due to small numbers.

* Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Use of Antiretroviral Therapy among Persons with HIV/AIDS

Figure 7.4 shows ART use in this sample (N=1,722) by CD4 level. The proportion receiving ART was greater among persons with lower CD4 counts: 90% of cases with a CD4 count between 200-350 cells/ μ L, 77% with a CD4 count between 351-500 cells/ μ L, and 57% with a CD4 count above 500 cells/ μ L received ART.

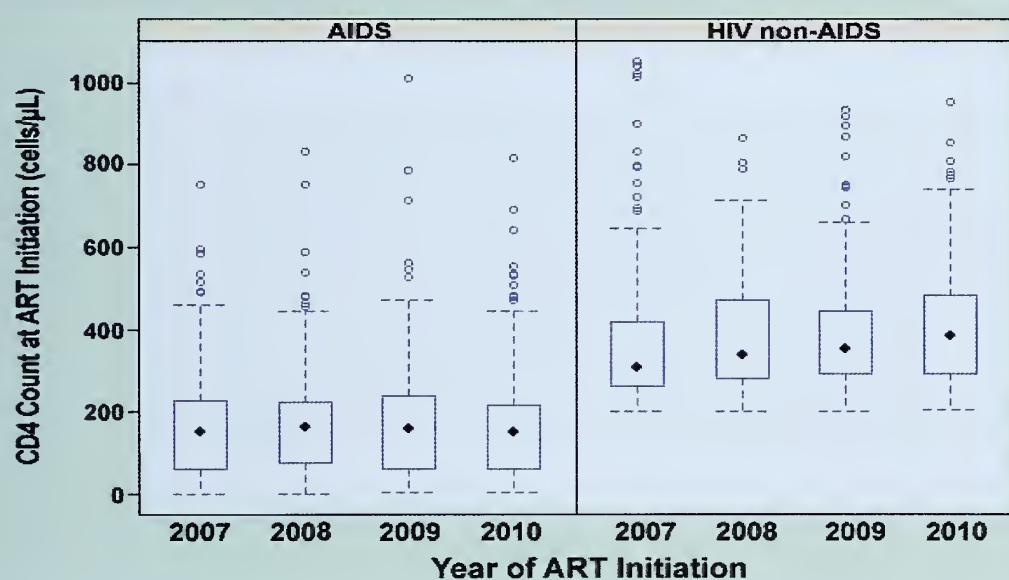
Figure 7.4 Estimate of antiretroviral therapy use* in a sample of HIV non-AIDS cases with chart review by CD4 level, December 2010, San Francisco



* See Technical Notes "Estimate of ART Use."

In order to understand the timing of treatment initiation among HIV-infected persons in relation to their CD4 level, we examined CD4 counts for HIV patients who started ART between 2007 and 2010 (Figure 7.5). The figure shows the distribution of CD4 count by diagnosis at ART initiation and year of ART initiation. We included persons for whom information regarding treatment start date and a CD4 count within six months prior to the ART initiation was available. If multiple CD4 counts prior to the treatment were available, the lowest CD4 count was selected. The distribution of CD4 counts at time of ART initiation for persons with an AIDS diagnosis did not change appreciably between 2007 and 2010. However, among persons with HIV non-AIDS, the distribution of CD4 counts at ART initiation shifts slightly higher with time. This suggests a trend towards initiating ART earlier in the course of disease.

Figure 7.5 Distribution of CD4 level at time of treatment among persons with HIV/AIDS who started antiretroviral therapy in 2007-2010, San Francisco



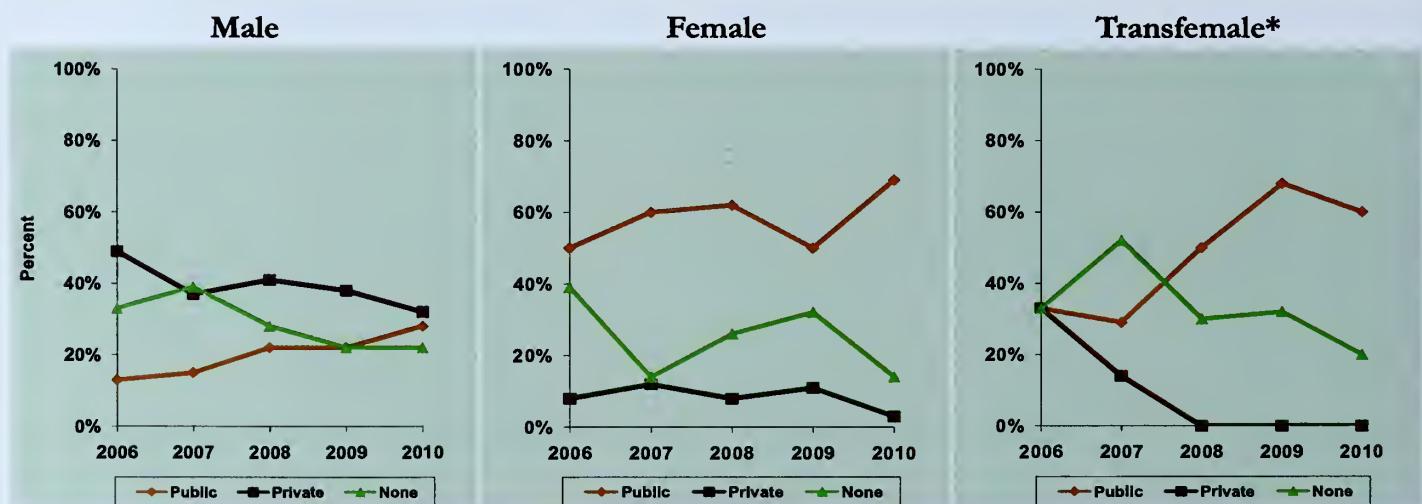
	AIDS				HIV non-AIDS			
	2007	2008	2009	2010	2007	2008	2009	2010
Case count	233	243	162	138	194	194	153	112
CD4, 75th percentile	228	223	239	216	417	470	443	481
CD4, Median	151	162	160	152	307	338	354	385
CD4, 25th percentile	61	74	60	59	262	279	294	293

- Each black point indicates a median, the top and bottom of each box represents, respectively, the 75th and 25th percentile of the distribution. The plot is limited to a maximum of 1,100 cells/µL. The circles indicate outliers.

8 Insurance Status at Time of HIV/AIDS Diagnosis

The insurance status at time of initial HIV diagnosis differs among men, women, and transfemale persons. The proportion of men with private insurance was consistently higher than proportions of women and transfemale persons with private insurance (Figure 8.1). In recent years, the proportions of males diagnosed with HIV with private and public insurance has become more similar, while the proportion with no insurance has declined since 2007 from 39% to 22% in 2009 and 2010. For women, since 2006, 50% or more of persons diagnosed with HIV had public insurance at diagnosis. Compared to males and females diagnosed with HIV, transfemales had the highest proportion with no insurance coverage between 2006 and 2010.

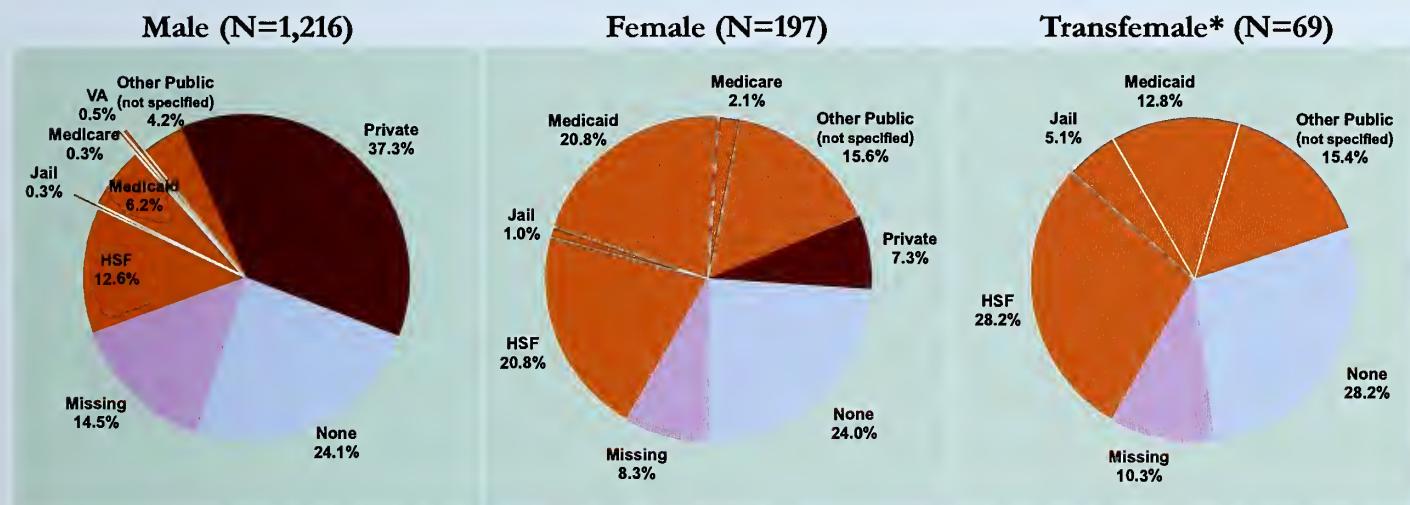
Figure 8.1 Trends in insurance status at time of initial HIV diagnosis by gender, 2006-2010, San Francisco



* Transfemal data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Figure 8.2 shows the distribution of insurance types by gender for HIV/AIDS cases diagnosed in 2008-2010. Female and transfemale cases diagnosed during this time period had higher proportions that were under-insured (i.e. having no insurance or public insurance) compared to males. Females had the highest proportions using state or federally-sponsored insurance (Medicaid, Medicare) at time of initial HIV diagnosis. Transfemales also had the highest proportion using Healthy San Francisco (HSF), the county-sponsored access to health care program for San Francisco residents that became widely available in 2008.

Figure 8.2 HIV/AIDS cases by gender and insurance status at time of initial HIV diagnosis, 2008-2010, San Francisco



* Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

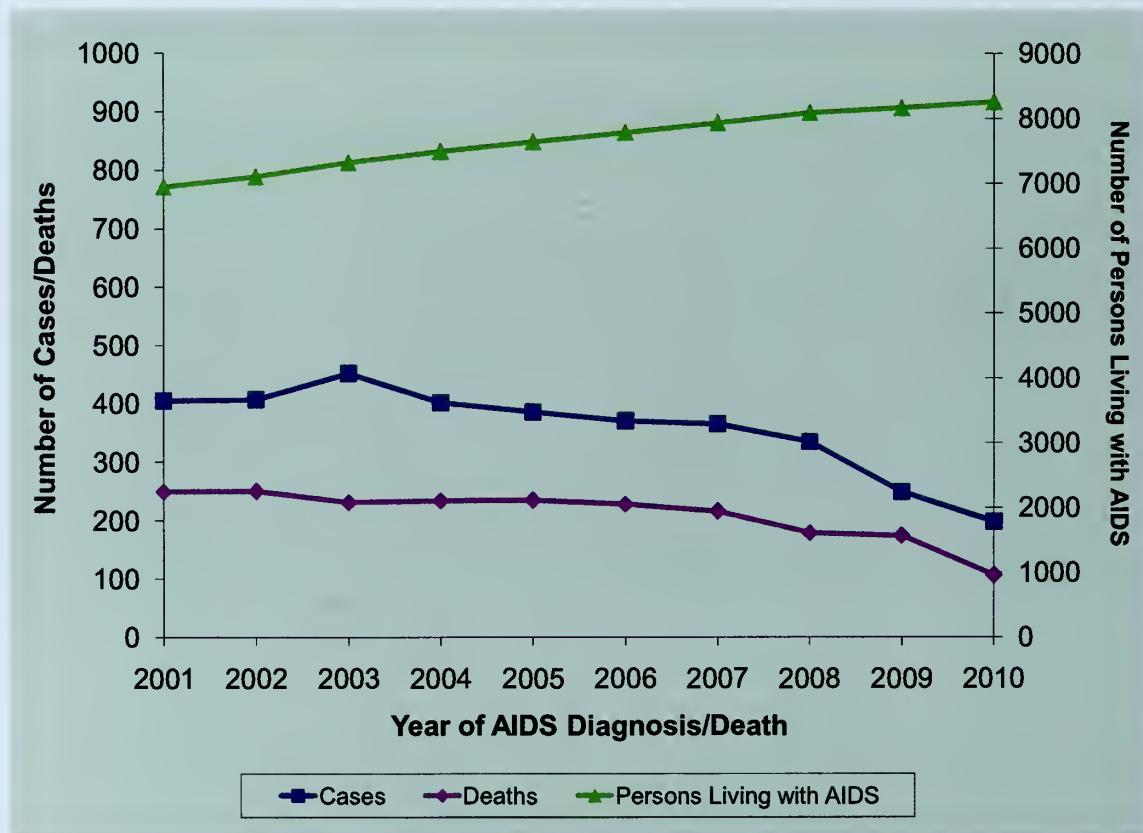
9

HIV/AIDS among Men Who Have Sex with Men

HIV/AIDS surveillance data

Over the last decade, the number of new AIDS cases and AIDS deaths declined among MSM while the number of MSM living with AIDS increased. Between 2003 and 2005, deaths among MSM were stable (Figure 9.1). By the end of 2010, there were 8,253 MSM living with AIDS in San Francisco.

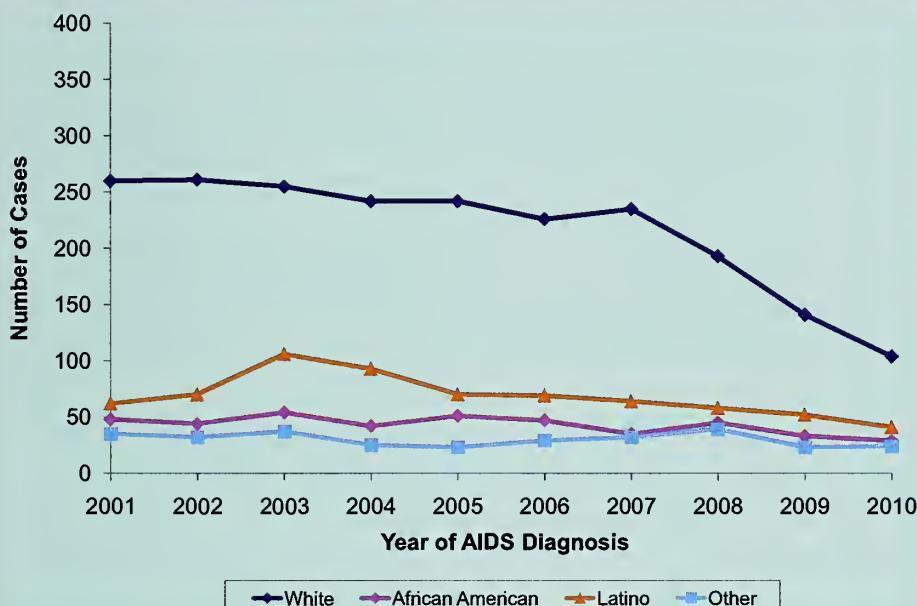
Figure 9.1 AIDS cases, deaths, and prevalence among MSM*, 2001-2010, San Francisco



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The majority of San Francisco's MSM AIDS cases are white (Figure 9.2). The number of MSM AIDS declined gradually from 2001 to 2007 and more sharply beginning in 2008. Latinos are the second highest affected race/ethnicity group among MSM AIDS cases. In 2010 there were 104 white MSM, 41 Latino MSM, and 29 African American MSM diagnosed with AIDS in San Francisco.

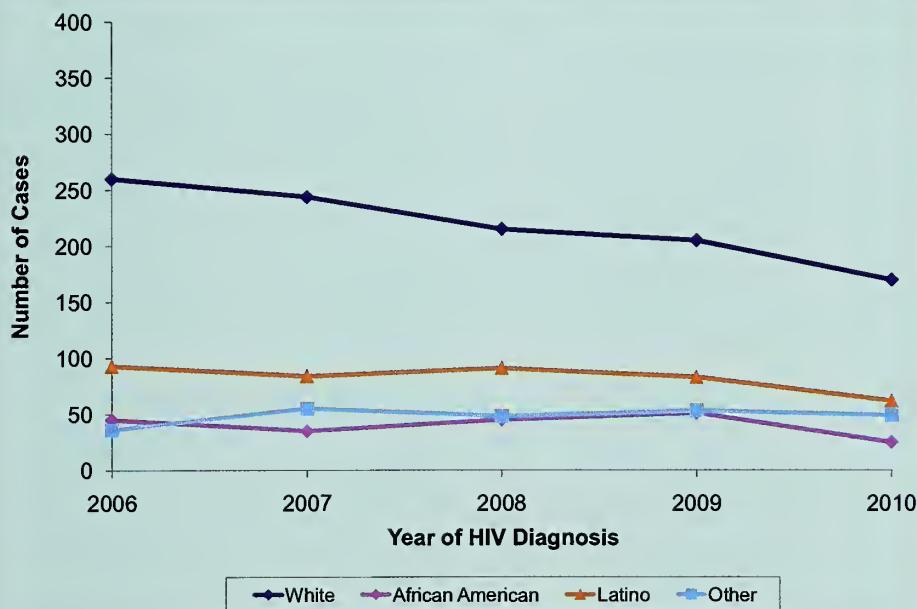
Figure 9.2 AIDS cases among MSM* by race/ethnicity, 2001-2010, San Francisco



* Includes MSM and MSM IDU.

Persons who are white make up the largest race/ethnicity group of San Francisco's MSM cases diagnosed with HIV infection (Figure 9.3). Trends of cases diagnosed with HIV infection between 2006 and 2010 indicate that there was a decline among white MSM, while the number of cases for other race/ethnicity groups was fairly stable.

Figure 9.3 Cases diagnosed with HIV infection* among MSM by race/ethnicity, 2006-2010, San Francisco



* Includes MSM and MSM IDU with HIV/AIDS by year of their initial HIV diagnosis.

HIV/AIDS among Men Who Have Sex with Men

HIV sexual behavior data

The STOP AIDS Project collects information on sexual behaviors and self-reported HIV status of men who have sex with men who participate in their outreach prevention activities in San Francisco. These data are collected anonymously and shared with the San Francisco Department of Public Health to track trends in HIV-related risk behavior. Such data may not be representative of all MSM in San Francisco. In this section, trends in unprotected anal intercourse (UAI) in the past six months are assessed for men 18 years and older who reside in San Francisco.

Figure 9.4 shows trends in reported UAI (either insertive or receptive) by self-reported HIV serostatus. Between 2006 to 2010, the percent among HIV-negative MSM who reported UAI has steadily declined from 42% in 2006 to 32% in 2010. Among HIV-positive men, the percent UAI has fluctuated from a low of 45% in 2008 to a high of 63% in 2010.

Figure 9.5 shows the percent of MSM who reported UAI with potentially HIV discordant partners, a measure that gauges the potential for HIV transmission by excluding sex between men known to be the same HIV status. A potentially discordant partnership is defined as partner whose HIV status differs from the respondent's or is unknown. Since 2006, insertive UAI between HIV-positive men and their discordant partners appears to be stable. Similarly, the percent of HIV-negative men who reported receptive UAI with a potentially discordant partner appears to be stable at about 5%.

Figure 9.4 Percent of MSM reporting unprotected anal intercourse in the last six months by self-reported HIV status, the STOP AIDS Project, 2006-2010, San Francisco

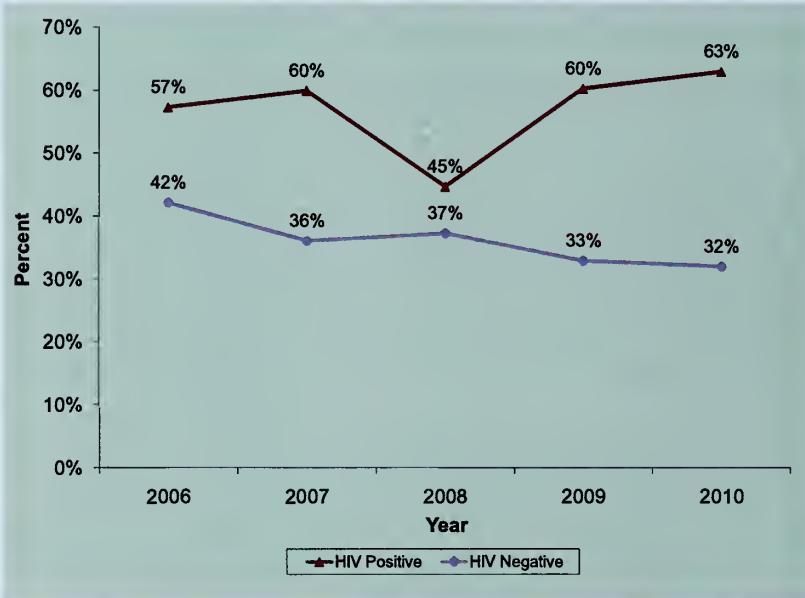
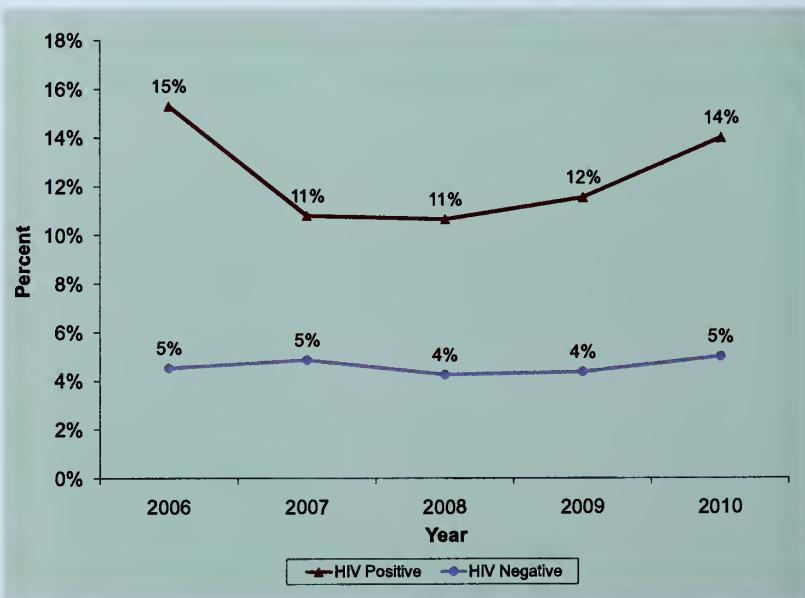


Figure 9.5 Percent of MSM reporting unprotected anal intercourse in the last six months with potentially HIV discordant partners by self-reported HIV status, the STOP AIDS Project, 2006-2010, San Francisco



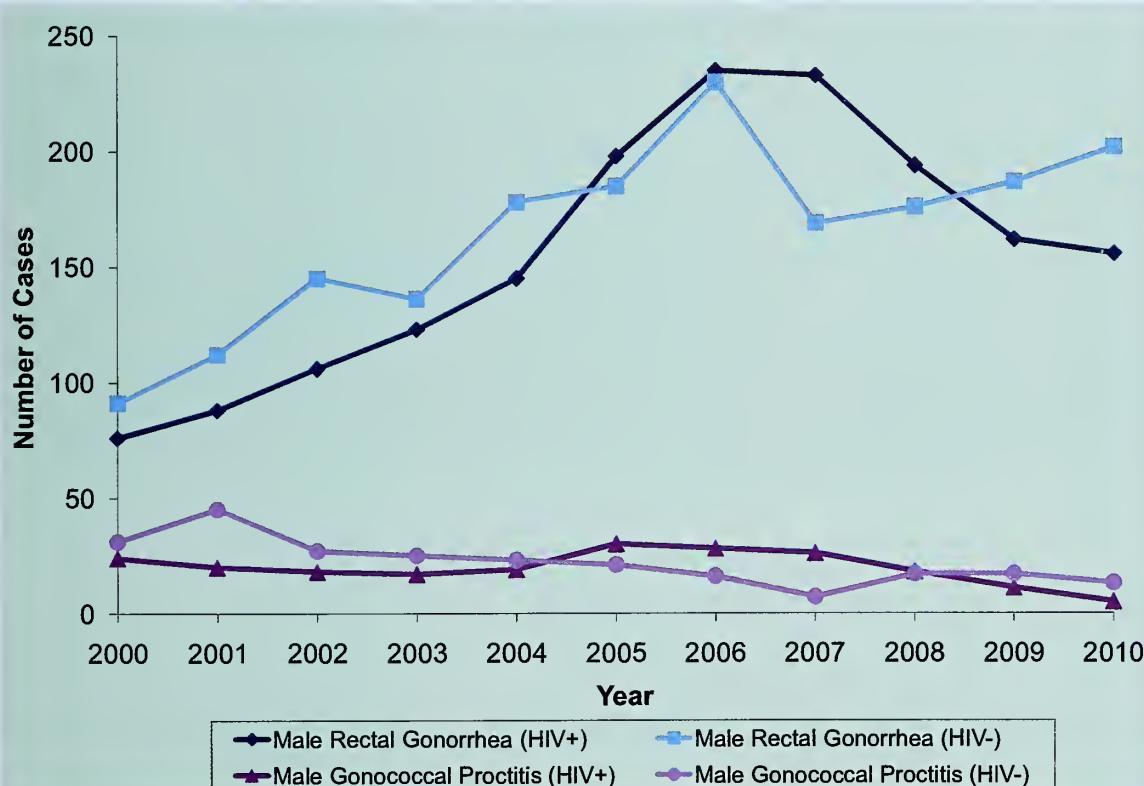
Sexually transmitted diseases among MSM

Figure 9.6 shows trends in male rectal gonorrhea and male gonococcal proctitis among MSM in San Francisco from 2000 through 2010 by HIV serostatus. Data on male rectal gonorrhea originate from case reporting from laboratories and health providers throughout the city. Data on male gonococcal proctitis originate from the municipal STD clinic only. Infection with gonorrhea is a biological marker for high risk sexual behavior. Among men, rectal gonorrhea is a marker for unprotected receptive anal sex.

The last decade has seen a steady increase in reported cases of male rectal gonorrhea followed by a decrease after 2006 among HIV-positive MSM. Male gonococcal proctitis represent men with symptomatic infection. Data on male gonococcal proctitis suggest that some of the increase in reported male rectal gonorrhea may be due to increased screening or reporting.

Data may underestimate true levels of infections due to several factors, including lack of rectal screening by many health providers, under reporting, delayed reporting, and a large proportion of cases that do not manifest symptoms.

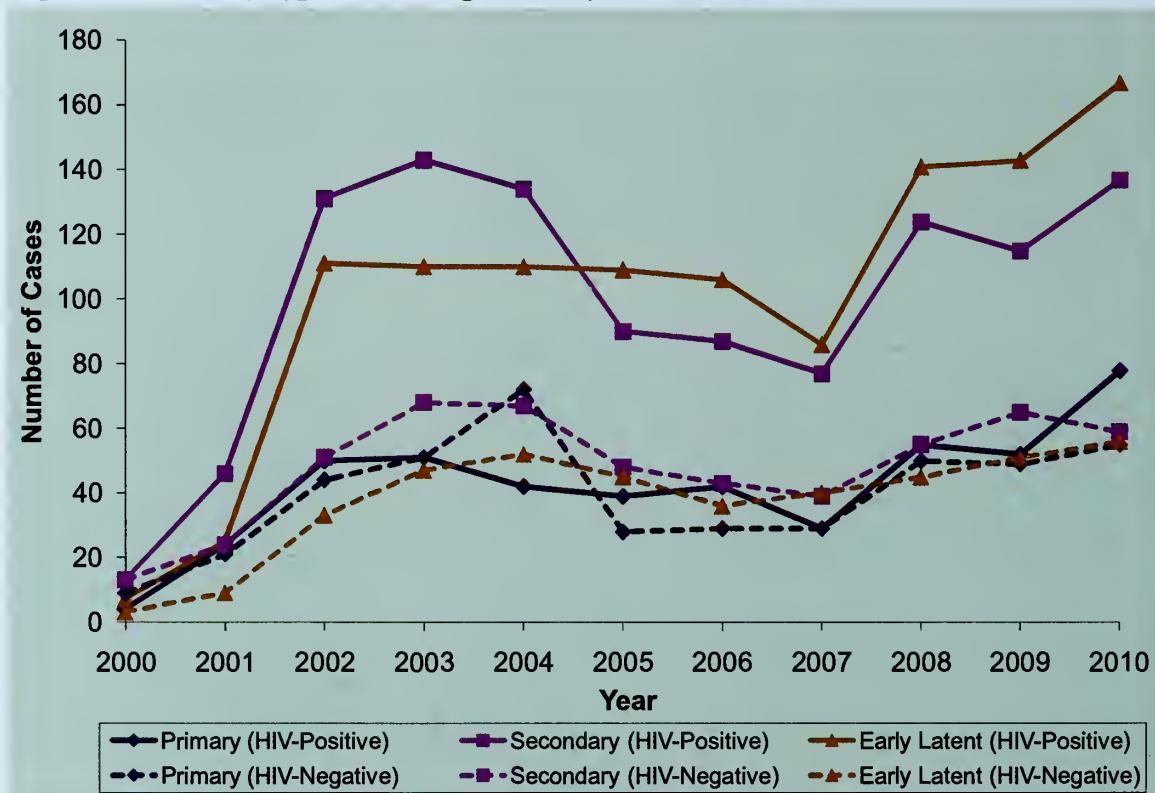
Figure 9.6 Male rectal gonorrhea and male gonococcal proctitis among MSM by HIV serostatus, 2000-2010, San Francisco



HIV/AIDS among Men Who Have Sex with Men

Figure 9.7 shows trends in early syphilis cases (primary, secondary, and early latent) among MSM in San Francisco from 2000 through 2010 by HIV serostatus. Data originate from case reporting from laboratories and health providers throughout the city and from the municipal STD clinic, the site where most of the patients were diagnosed. Like gonorrhea, syphilis is a biological marker for high risk sexual behavior. The increase from 2000 to 2010 in early syphilis among MSM in San Francisco is dramatic. In 2005, early syphilis among MSM declined from 2004. However, in 2008, primary, secondary and early latent syphilis among MSM began to rise again, especially among HIV-positive MSM.

Figure 9.7 Early syphilis among MSM by HIV serostatus, 2000-2010, San Francisco

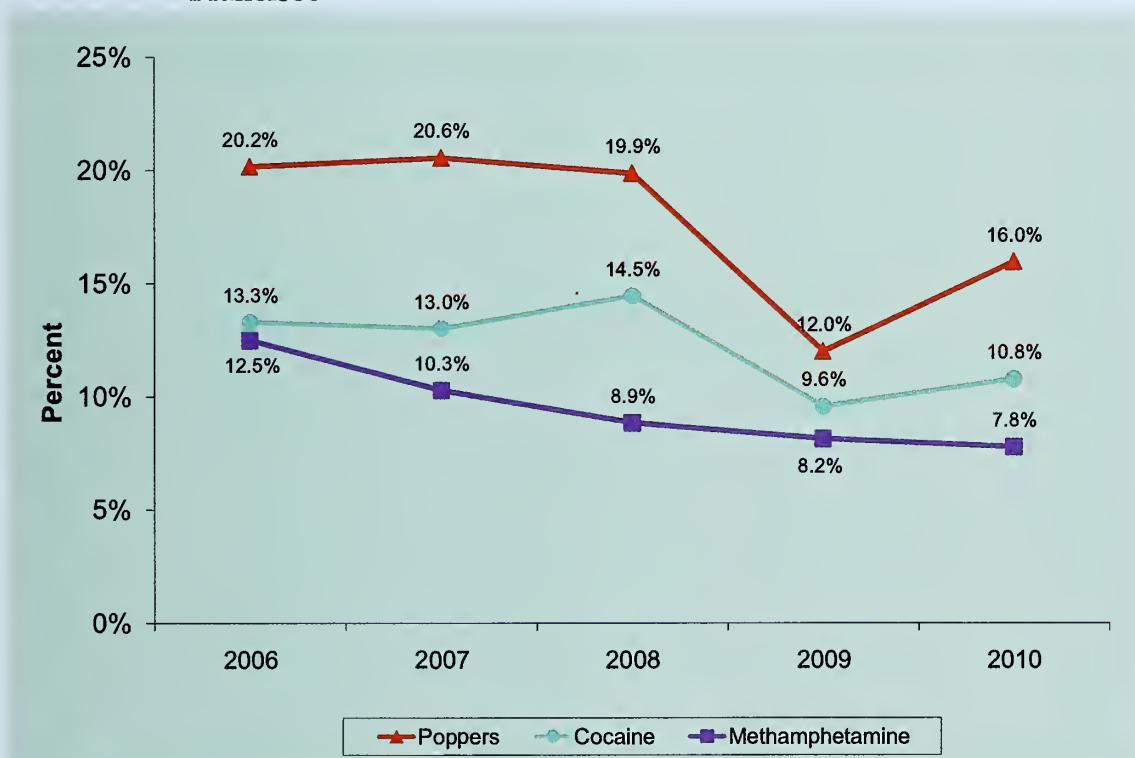


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Substance use

The STOP AIDS Project records substance use among San Francisco MSM. Figure 9.8 shows the percent of MSM who used methamphetamines, “poppers,” or cocaine in the past six months. Poppers continue to be the drug used by the largest percent of MSM and the percent reporting its use increased from 12% in 2009 to 16% in 2010. Cocaine use among MSM increased slightly in 2010 to 10.8%. Methamphetamine use in 2010 was just under 8%.

Figure 9.8 Substance use among MSM, the STOP AIDS Project, 2006-2010, San Francisco

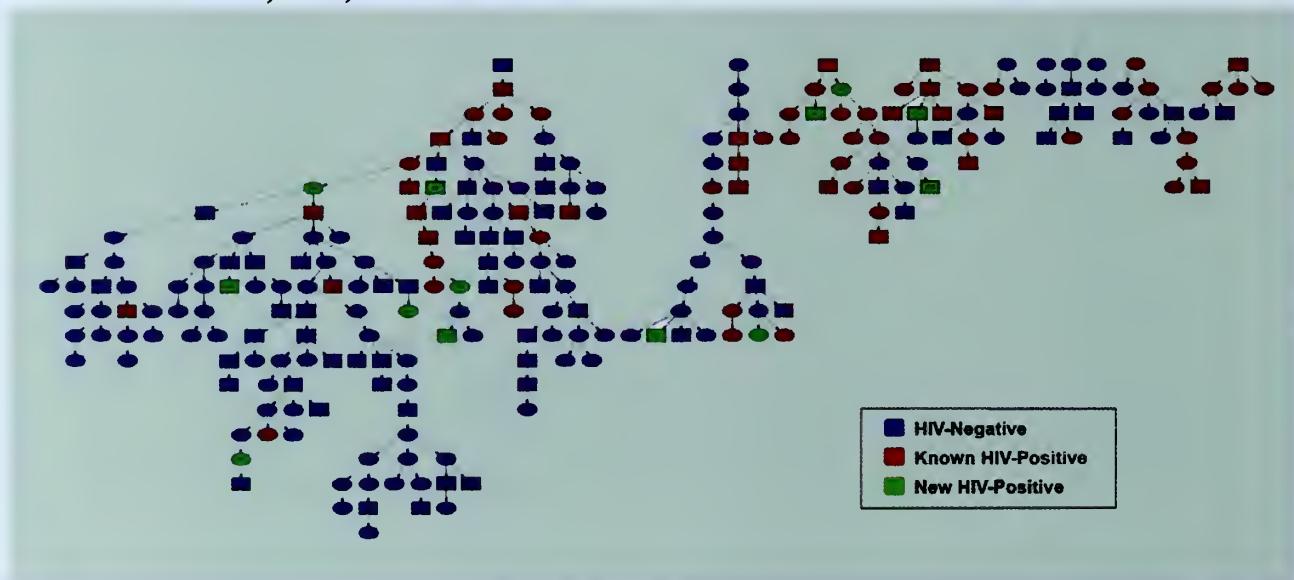


HIV/AIDS among Men Who Have Sex with Men

African American MSM HIV Testing Project

Black men who have sex with men (MSM) are disproportionately affected by HIV infection and black MSM in San Francisco may have higher rates of unrecognized HIV infections. We used a network approach to deliver HIV testing to black MSM in San Francisco and collected risk assessment data during 2009. Initial seed participants were chosen purposefully to reflect the diversity of black MSM in San Francisco. Seeds were contacted through community based organizations and referrals. Participants were asked to recruit any of their social contacts who were also black MSM. Recruitment by risk level and HIV status was heterogeneous. Most men reported ever having had an HIV test (93.4%) while only 53.1% and 32% had an HIV test in the past 12 and six months, respectively. Overall HIV prevalence in this population is 31.6%. HIV infection among this population is associated with having a high school education or higher and having an annual income of \$10,000 to \$30,000 compared to less than \$10,000. Fully 23% of HIV positive black MSM are unaware of their infection. Only a third of unrecognized infections were recruited by a known HIV-positive participant. Linkage to care was a challenge and underscores the need for comprehensive systems and support to link black MSM to care and treatment.

Figure 9.9 Location of new detections of HIV infection in recruitment chains among black MSM, 2009, San Francisco

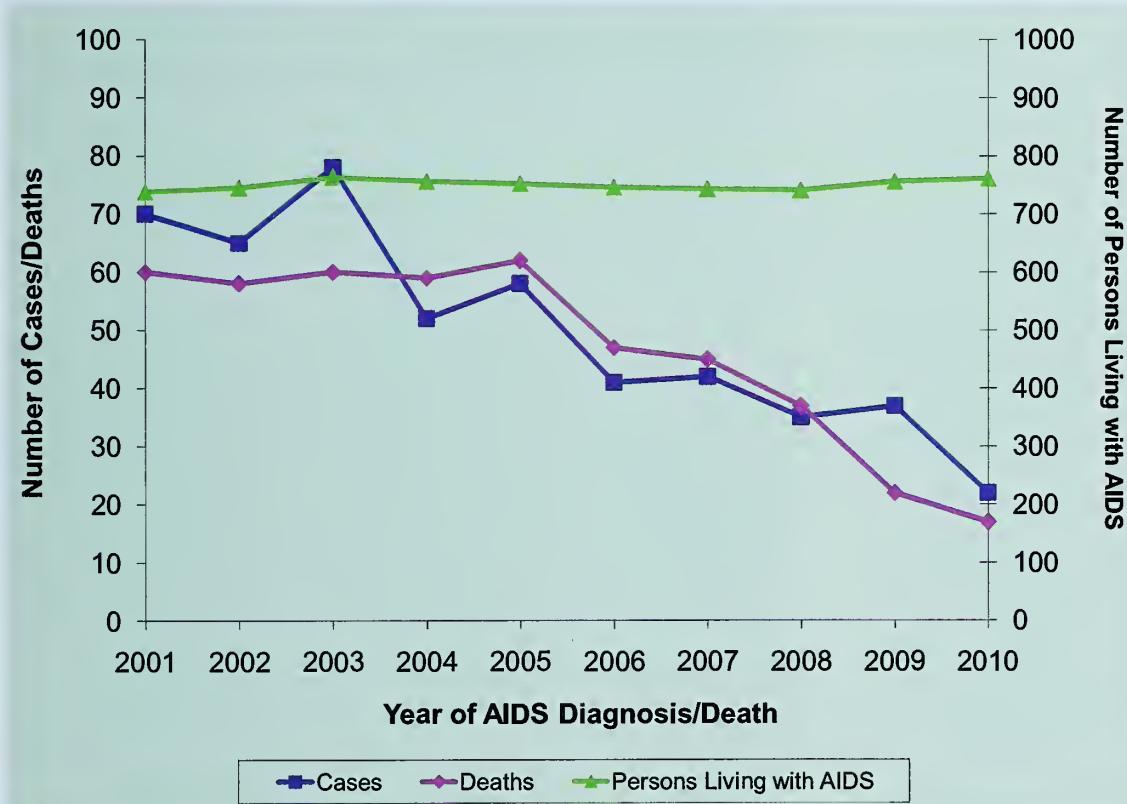


10 HIV/AIDS among Injection Drug Users

HIV/AIDS surveillance data

Injection drug use by non-MSM is the third most frequent exposure group among cumulative AIDS cases in San Francisco. This differs from national AIDS data where non-MSM IDU is the second most frequent exposure group among all cases. The number of living non-MSM IDU in San Francisco has been fairly level from 2001 to 2010 (Figure 10.1). This is the likely result of similar numbers of deaths and new AIDS cases in recent years. As of December 31, 2010, there were 761 non-MSM IDU living with AIDS in San Francisco.

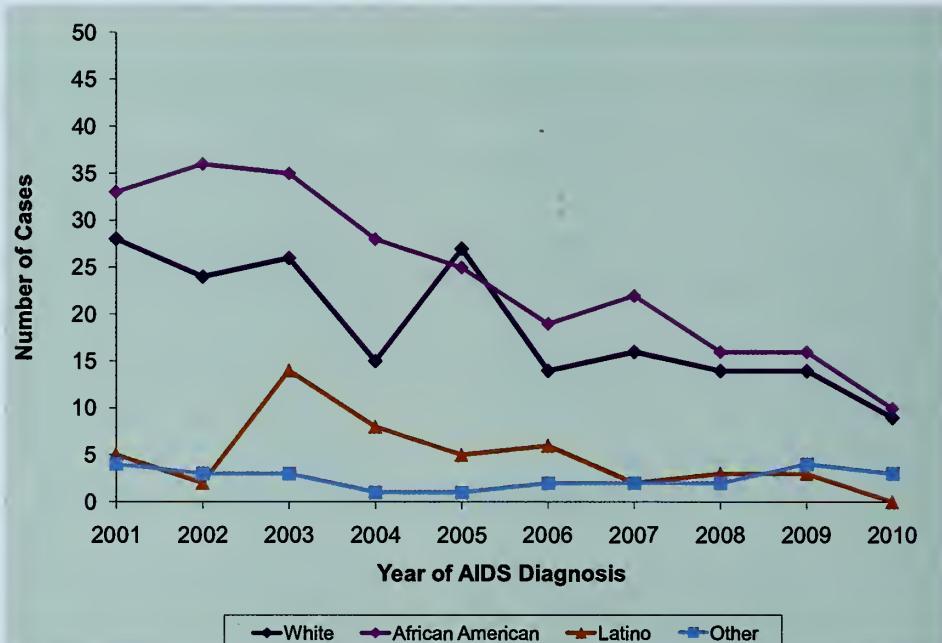
Figure 10.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 2001-2010, San Francisco



HIV/AIDS among Injection Drug Users

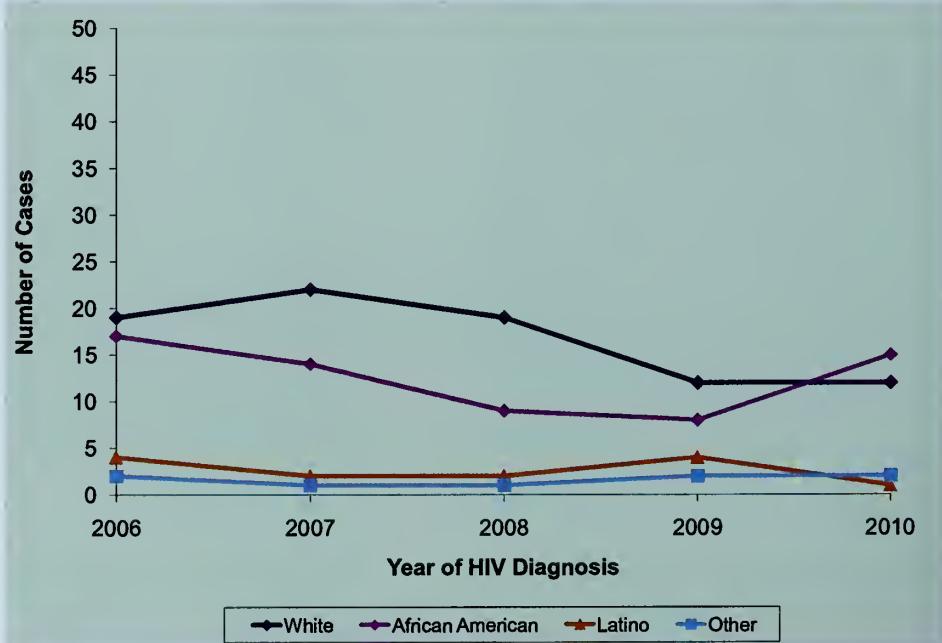
From 2001 to 2004, African Americans accounted for the greatest number of AIDS cases each year among non-MSM IDU (Figure 10.2). Since 2005, the number of white non-MSM IDU AIDS cases has been similar to the number of African American non-MSM IDU. Non-MSM IDU who were Latino or of other race/ethnicity groups accounted for few AIDS cases between 2001 and 2010.

Figure 10.2 AIDS cases among non-MSM IDU by race/ethnicity, 2001-2010, San Francisco



Examined by year of HIV diagnosis, among non-MSM IDU, whites accounted for the greatest number of cases diagnosed with HIV infection each year between 2006 and 2009 (Figure 10.3). In 2010, the number of HIV cases was the highest among African American IDU. Since 2006, the numbers of white and African American non-MSM IDU cases diagnosed with HIV infection have declined while the numbers for other race/ethnicity groups remained stable.

Figure 10.3 Cases diagnosed with HIV infection* among non-MSM IDU by race/ethnicity, 2006-2010, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

Table 10.1 shows the risk and race/ethnicity distributions of AIDS cases that were directly or indirectly associated with injection drug use. MSM IDU account for 65% of all IDU-associated AIDS cases, followed by male heterosexual IDU who account for 21%. Whites make up the largest proportion of MSM IDU and lesbian IDU, while African Americans account for the largest proportion of IDU-associated AIDS cases in all other exposure categories.

Table 10.1 Injection drug use-associated AIDS cases by exposure category and race/ethnicity, diagnosed through December 2010, San Francisco

Exposure Category	Race/Ethnicity Distribution by Percent				
	Total Number	White	African American	Latino	Other
Male heterosexual IDU	1,410	36%	48%	12%	4%
Female heterosexual IDU	707	32%	52%	11%	5%
MSM IDU	4,430	69%	16%	11%	4%
Lesbian IDU	60	43%	37%	12%	8%
Heterosexual contact with IDU	155	32%	43%	16%	9%
Children whose mothers are IDUs or mother's sex partners are IDUs	23	22%	43%	17%	17%

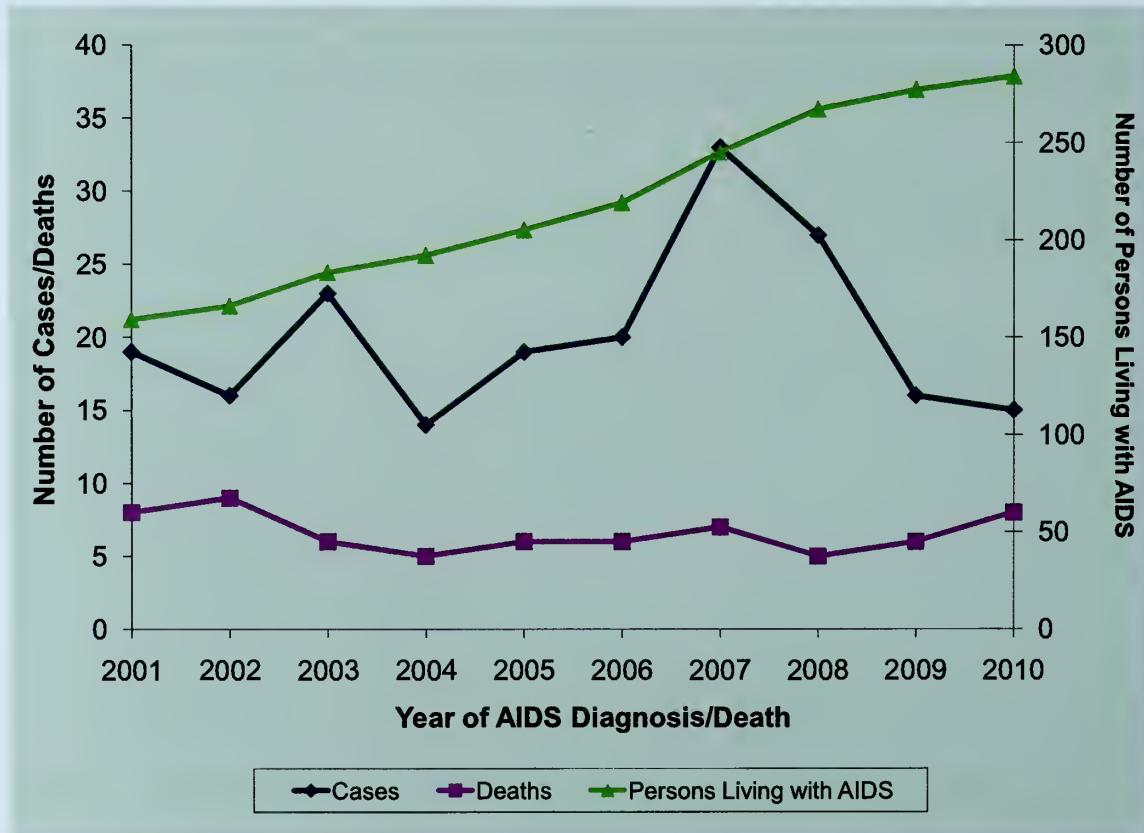
11

HIV/AIDS among Heterosexuals

HIV/AIDS surveillance data

Between 2001 and 2006 the number of AIDS cases among persons who were infected with HIV through heterosexual contact was fairly level (Figure 11.1). The number of AIDS cases in non-IDU heterosexuals peaked in 2007 at 33 cases and declined to 15 in 2010. However, cases in 2009 and 2010 may be underestimated due to the delay in reporting new AIDS cases. Deaths among non-IDU heterosexuals have been stable during the last decade. The number of non-IDU heterosexuals living with AIDS increased to 284 by December 31, 2010.

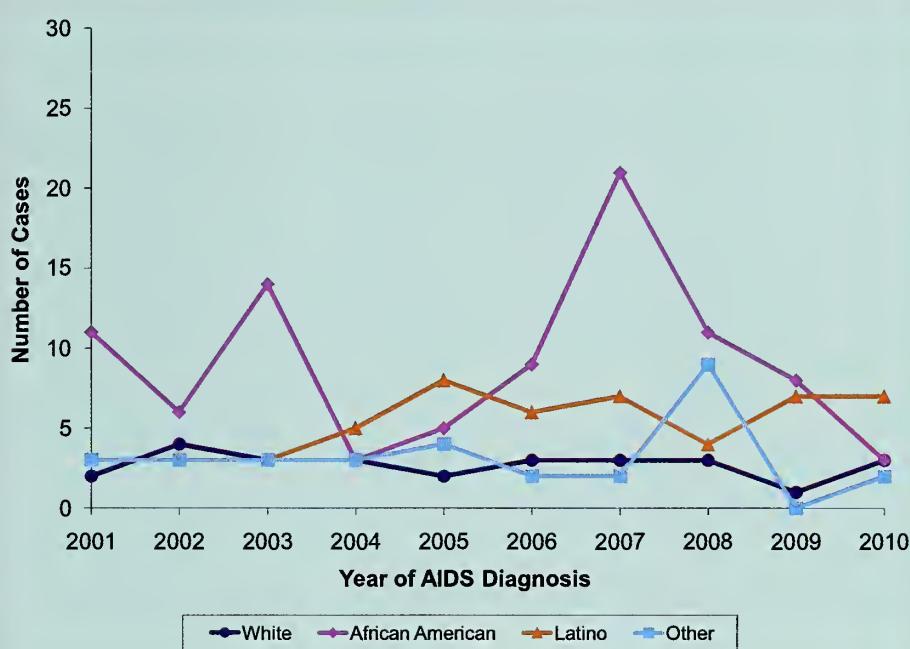
Figure 11.1 AIDS cases, deaths, and prevalence among heterosexuals, 2001-2010, San Francisco



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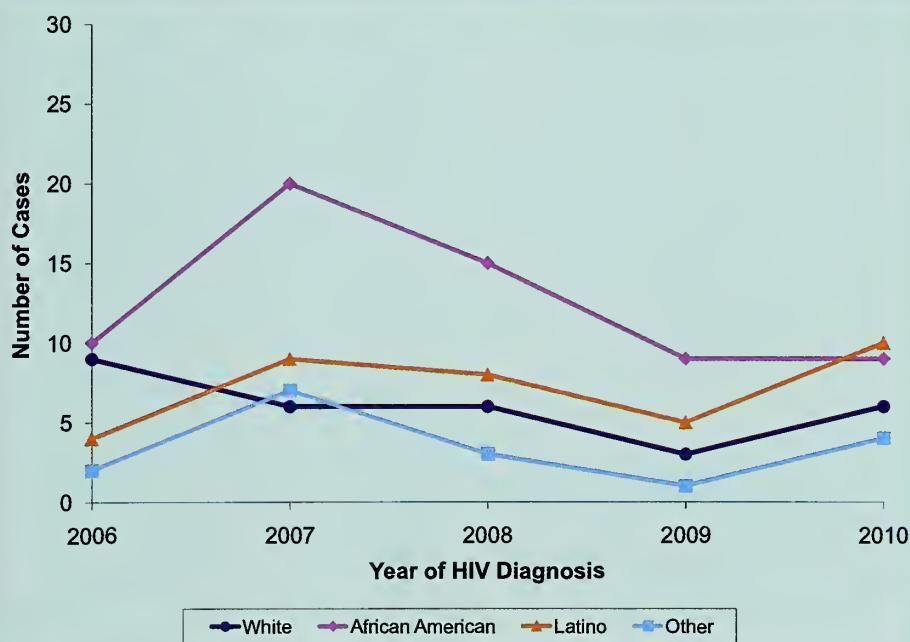
Trends in heterosexual AIDS cases by race/ethnicity are difficult to characterize due to the small number of cases (Figure 11.2). Overall, African Americans accounted for the greatest number of heterosexual AIDS cases since 2001. The number of Latino AIDS cases was stable from 2001 to 2003 and increased thereafter.

Figure 11.2 AIDS cases among heterosexuals by race/ethnicity, 2001-2010, San Francisco



Similar to the trend for heterosexual AIDS cases by race/ethnicity, African American is the most prevalent race/ethnicity among heterosexual cases diagnosed with HIV infection (Figure 11.3). During the time period of 2006 to 2010, African Americans made up 43% of diagnosed heterosexual cases.

Figure 11.3 Cases diagnosed with HIV infection* among heterosexuals by race/ethnicity, 2006-2010, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

HIV/AIDS among Heterosexuals

The majority of heterosexually-acquired AIDS cases occurred in women (Table 11.1). Sex with an HIV-infected partner of unknown risk factor was the most frequent exposure category for both men and women, accounting for 74% of men exposed heterosexually and 46% of women exposed heterosexually.

Table 11.1 AIDS cases among heterosexuals by exposure category and gender, diagnosed through December 2010, San Francisco

Exposure Category	Men		Women	
	Number	%	Number	%
Sex with injection drug user	38	25%	117	37%
Sex with bisexual men	N/A	N/A	47	15%
Sex with HIV+ transfusion recipient	<5	–	<5	–
Sex with HIV+ persons of unknown risk	114	74%	149	46%

National HIV Behavioral Surveillance Data

As part of National HIV Behavioral Surveillance (NHBS), we conducted the second round of behavioral surveillance among heterosexuals at high risk for HIV infection in 2010. Census tracts with high heterosexual HIV/AIDS case burden were the focus of data collection. Of 446 participants only 1 (0.2%) tested positive for HIV infection.

Sexually transmitted diseases among heterosexuals

Figure 11.4 shows the annual number of primary, secondary, and early latent cases of syphilis among heterosexual men in San Francisco from 2000 through 2010. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Compared to MSM, syphilis among heterosexual men remains relatively low in recent years. There was an increase in 2008 that declined again by 2010.

Figure 11.4 Syphilis among heterosexual men, 2000-2010, San Francisco

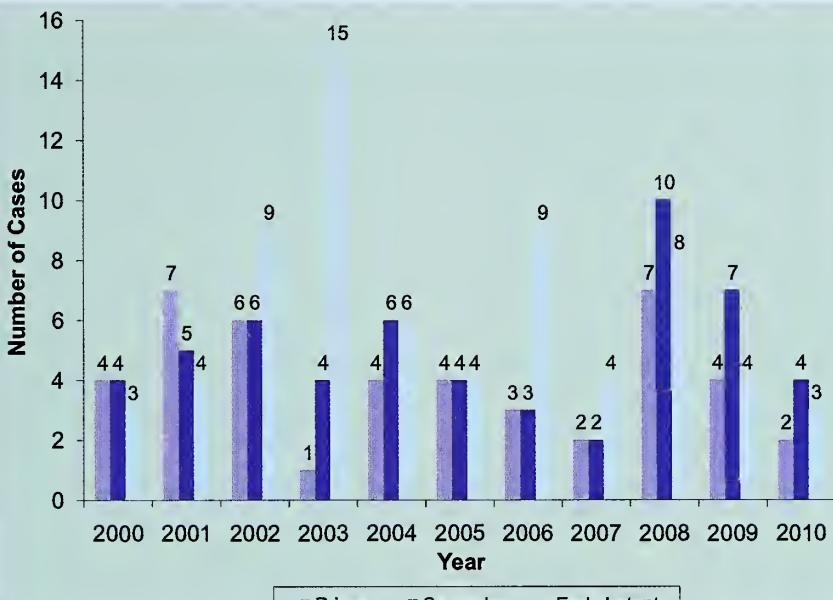
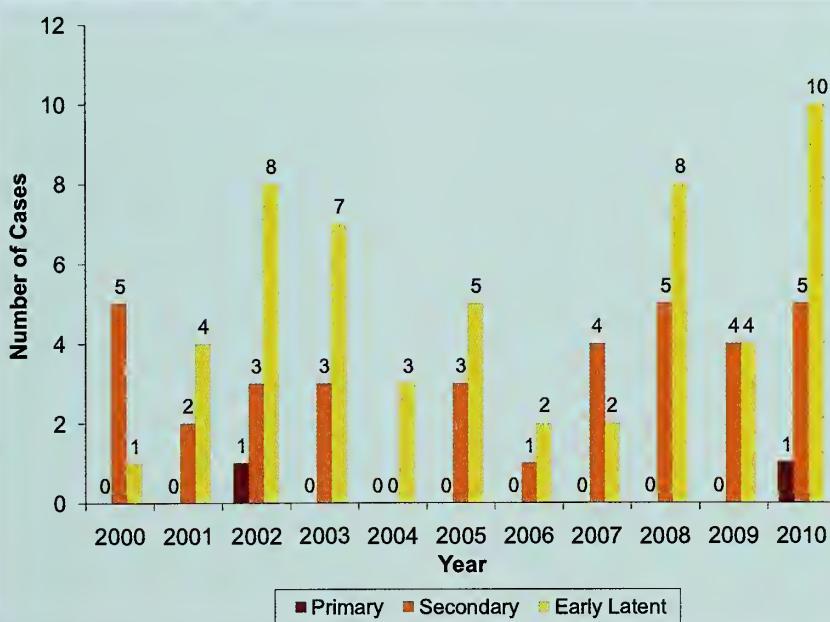


Figure 11.5 shows the annual number of primary, secondary, and early latent cases of syphilis among women in San Francisco from 2000 through 2009. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Among women, syphilis cases have been low and stable in recent years, with an increase in 2008 in secondary and early latent syphilis cases that has continued through 2010.

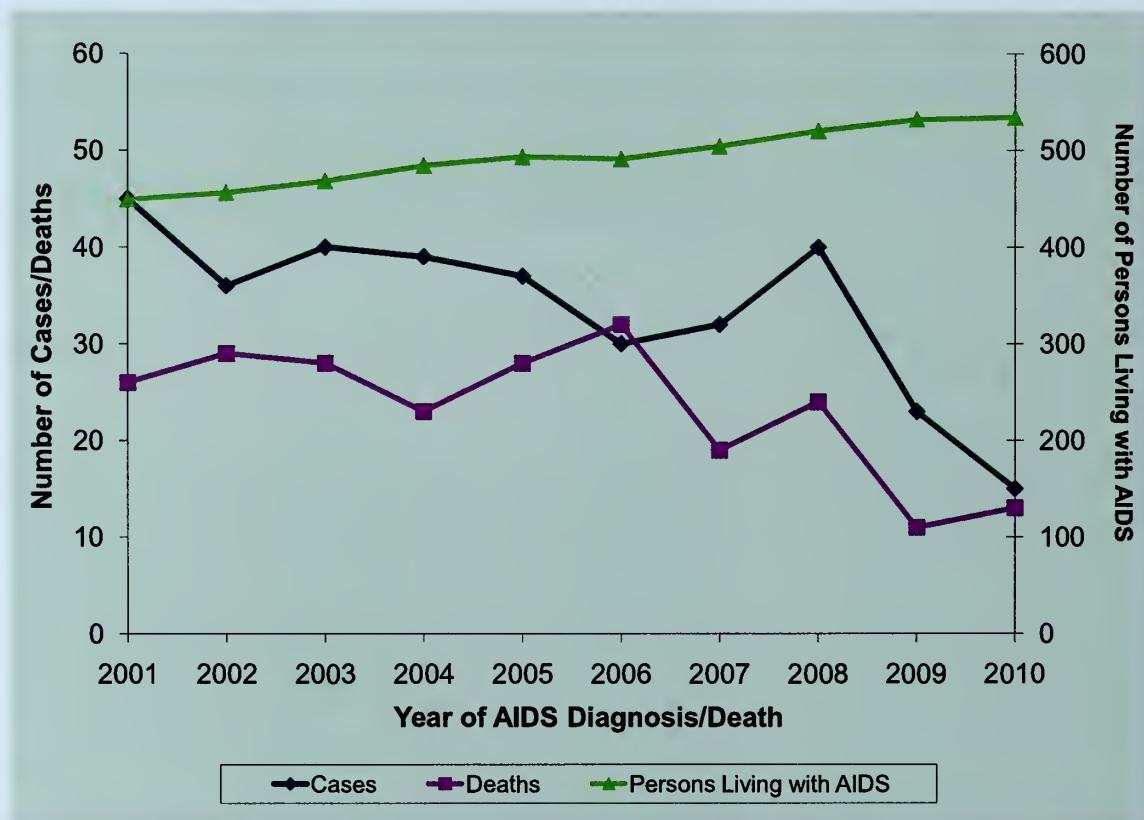
Figure 11.5 Syphilis among women, 2000-2010, San Francisco



12 HIV/AIDS among Women

AIDS cases among women in San Francisco declined from 2001 to 2010 (Figure 12.1). The number of deaths remained fairly stable from 2001 to 2005 and declined between 2006 and 2010. The numbers of AIDS cases and deaths in recent years may be underestimated due to delays in reporting. As of December 31, 2010 there were 534 women living with AIDS.

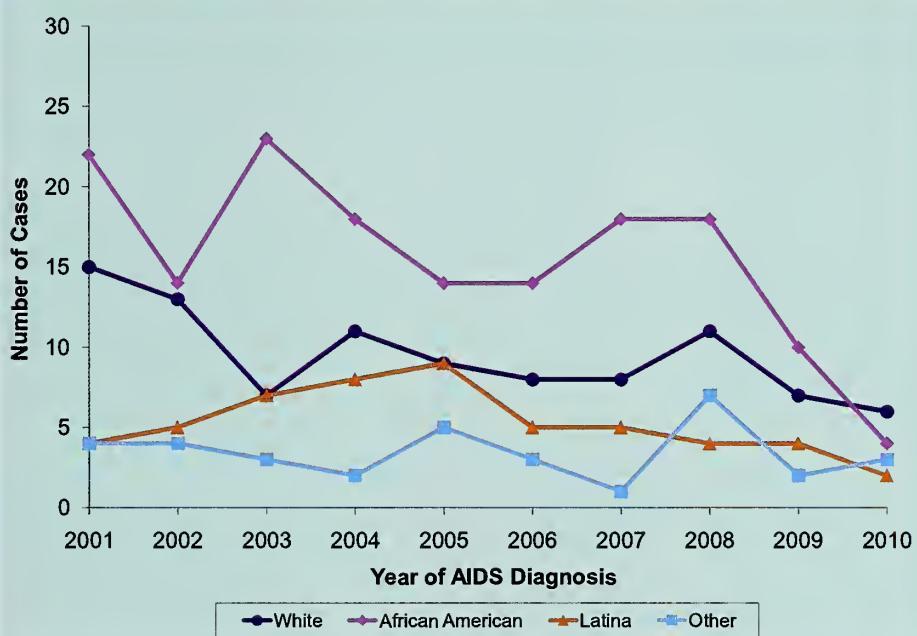
Figure 12.1 AIDS cases, deaths, and prevalence among women, 2001-2010, San Francisco



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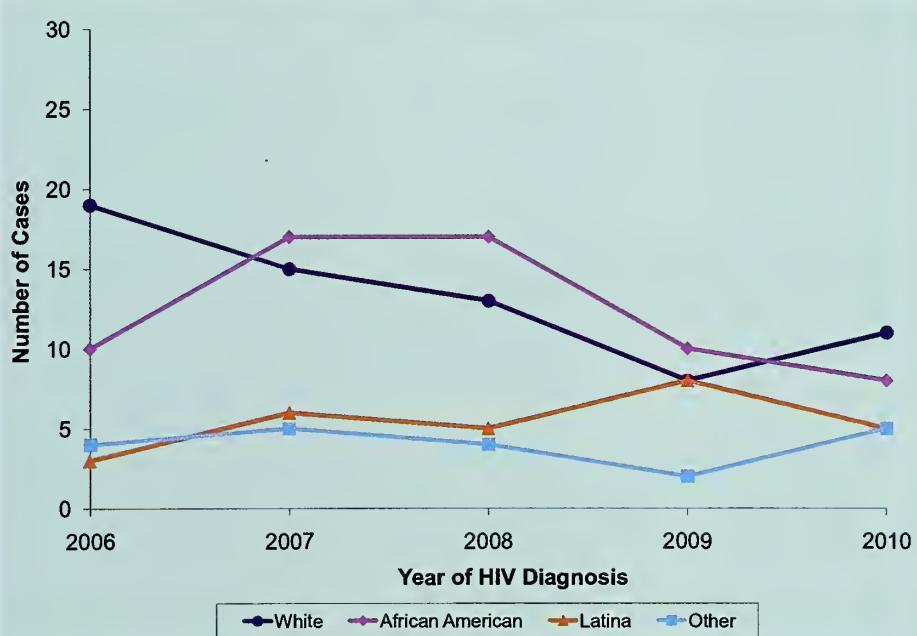
During 2001 to 2009, African American women represented the highest number of newly diagnosed female AIDS cases, and white women represented the second highest number of female AIDS cases (Figure 12.2). In 2010, the number of AIDS cases among white women was slightly higher than African American women.

Figure 12.2 Female AIDS cases by race/ethnicity, 2001-2010, San Francisco



African American and white are the two largest race/ethnicity groups among women diagnosed with HIV infection (Figure 12.3), although in 2009 Latina case numbers were similar to whites and African Americans. From 2006 to 2010, African Americans and whites accounted for 35% and 38% of female cases diagnosed with HIV infection, respectively.

Figure 12.3 Female cases diagnosed with HIV infection* by race/ethnicity, 2006-2010, San Francisco

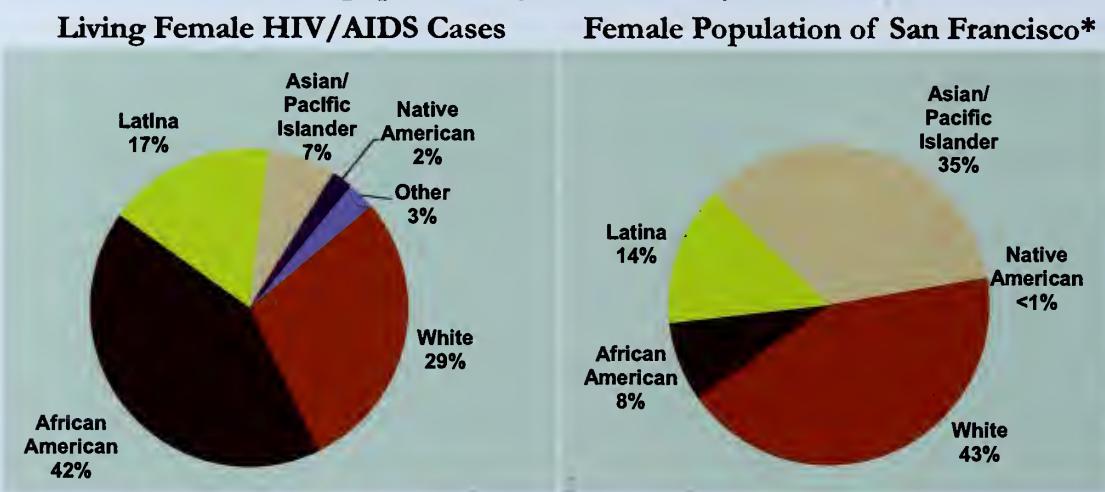


* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

HIV/AIDS among Women

Compared to the female population of San Francisco, African Americans are disproportionately affected among women diagnosed with HIV/AIDS (Figure 12.4). Although African American women represent 8% of the female population, as of December 31, 2010 they accounted for 42% of the living female HIV/AIDS cases in San Francisco.

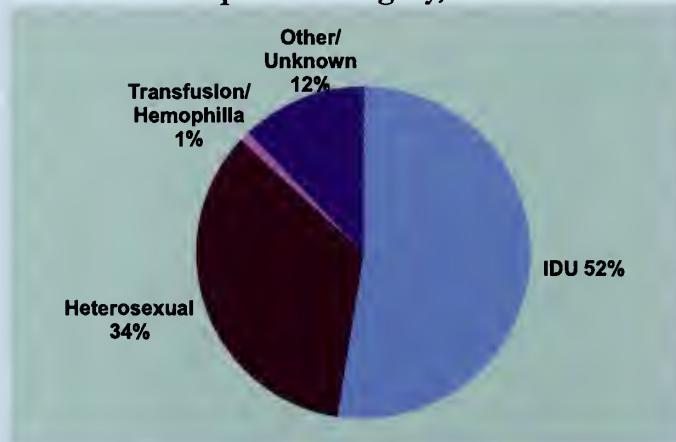
Figure 12.4 Living female HIV/AIDS cases diagnosed through December 2010 and female population by race/ethnicity, San Francisco



* United States 2000 Census data.

More than half of all living female HIV/AIDS cases diagnosed in San Francisco acquired HIV infection through injection drug use (Figure 12.5). More than one third of living female HIV/AIDS cases in San Francisco acquired HIV infection through heterosexual contact.

Figure 12.5 Living female HIV/AIDS cases diagnosed through December 2010 by exposure category, San Francisco



13 HIV/AIDS among Adolescents and Young Adults

Table 13.1 shows living HIV/AIDS cases diagnosed in San Francisco that were adolescents (age 13-19) and young adults (age 20-24) as of December 31, 2010. There were 21 adolescents and 148 young adults living with HIV/AIDS. Among living adolescent HIV/AIDS cases, the majority were perinatally infected with HIV. African Americans accounted for the highest proportion of living adolescent cases, followed by Latinos. Among living young adult HIV/AIDS cases, the majority were MSM and Latino.

Table 13.1 Living adolescent and young adult HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2010, San Francisco

	13-19 Years Old (N=21)	20-24 Years Old (N=148)
Exposure Category		
MSM	24%	69%
IDU	0%	5%
MSM IDU	0%	11%
Heterosexual	0%	3%
Perinatal	62%	5%
Other/Unidentified	14%	6%
Gender		
Male	48%	89%
Female	52%	7%
Transfemale*	0%	4%
Race/Ethnicity		
White	19%	28%
African American	38%	26%
Latino	29%	34%
Asian/Pacific Islander	5%	9%
Other/Unknown	10%	3%

* Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

Table 13.2 compares cases diagnosed with HIV infection among San Francisco adolescents and young adults with adolescents and young adults diagnosed nationally. Numbers of cases for the U.S. were reported using HIV/AIDS surveillance data from the 40 states with confidential name-based HIV reporting. Compared with national adolescent and young adult HIV/AIDS cases, San Francisco had a lower percentage of adolescent (13-19 years) cases.

Table 13.2 Cases diagnosed with HIV infection* among adolescents and young adults, 2007-2010, San Francisco and the United States

	Year of HIV Diagnosis			
	2007	2008	2009	2010
	Number	(%)	Number	(%)
San Francisco HIV/AIDS Cases				
Age 13-19 years at HIV diagnosis	9 (17)	12 (24)	4 (8)	5 (9)
Age 20-24 years at HIV diagnosis	44 (83)	39 (76)	48 (92)	48 (91)
Total	53 (100)	51 (100)	52 (100)	53 (100)
U.S. HIV/AIDS Cases				
Age 13-19 years at HIV diagnosis	1,779 (27)	1,851 (26)	1,771 (25)	N/A
Age 20-24 years at HIV diagnosis	4,700 (73)	5,156 (74)	5,327 (75)	N/A
Total	6,479 (100)	7,007 (100)	7,098 (100)	N/A

* Includes persons with HIV/AIDS by year of their initial HIV diagnosis. U.S. data are based on reported case counts from the 40 states with confidential name-based HIV reporting in CDC HIV Surveillance Report, 2009.

14 HIV/AIDS among Children

HIV/AIDS surveillance data

As of December 31, 2010, a cumulative total of 38 pediatric AIDS cases (less than 13 years old and resided in San Francisco at time of diagnosis) had been reported. There were 15 pediatric HIV non-AIDS cases reported between 2002 and 2010. The number of pediatric HIV/AIDS cases diagnosed peaked during 1991 and 1995, and declined during 1996-2005 (Figure 14.1). There were no pediatric HIV cases diagnosed after 2005.

Of the pediatric HIV/AIDS cases, 29 were known to be alive as of December 2010, with many surviving beyond childhood. The majority of living pediatric HIV/AIDS cases acquired infection from a high-risk or AIDS-diagnosed mother (Table 14.1). Sixty-two percent are female and 93% are children of color.

Figure 14.1 Pediatric HIV/AIDS cases by year of HIV diagnosis, 1980-2010, San Francisco

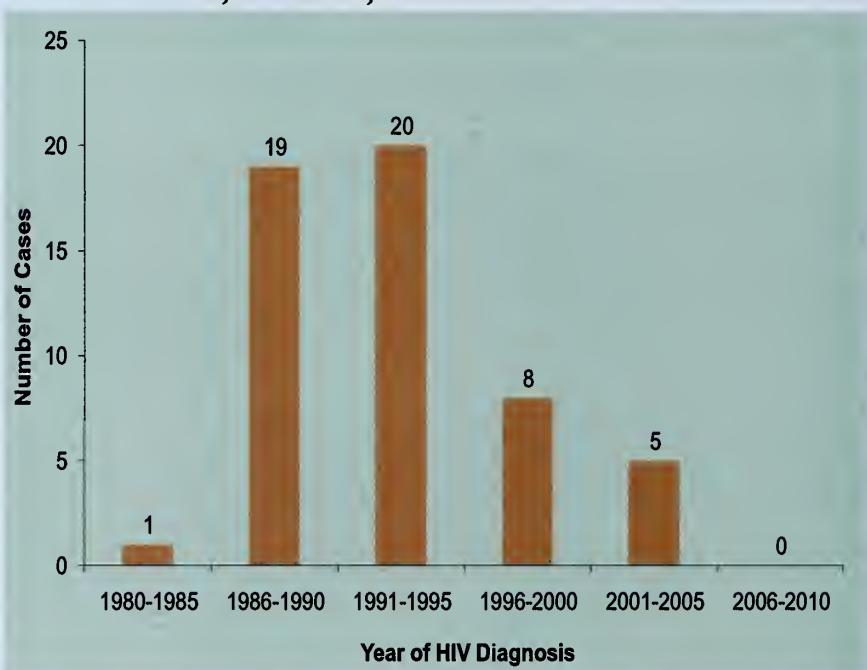


Table 14.1 Living pediatric HIV/AIDS cases by exposure category, gender, and race/ethnicity, December 2010, San Francisco

N= 29

Exposure Category

Perinatal	90%
Other/Unidentified	10%

Gender

Male	38%
Female	62%

Race/Ethnicity

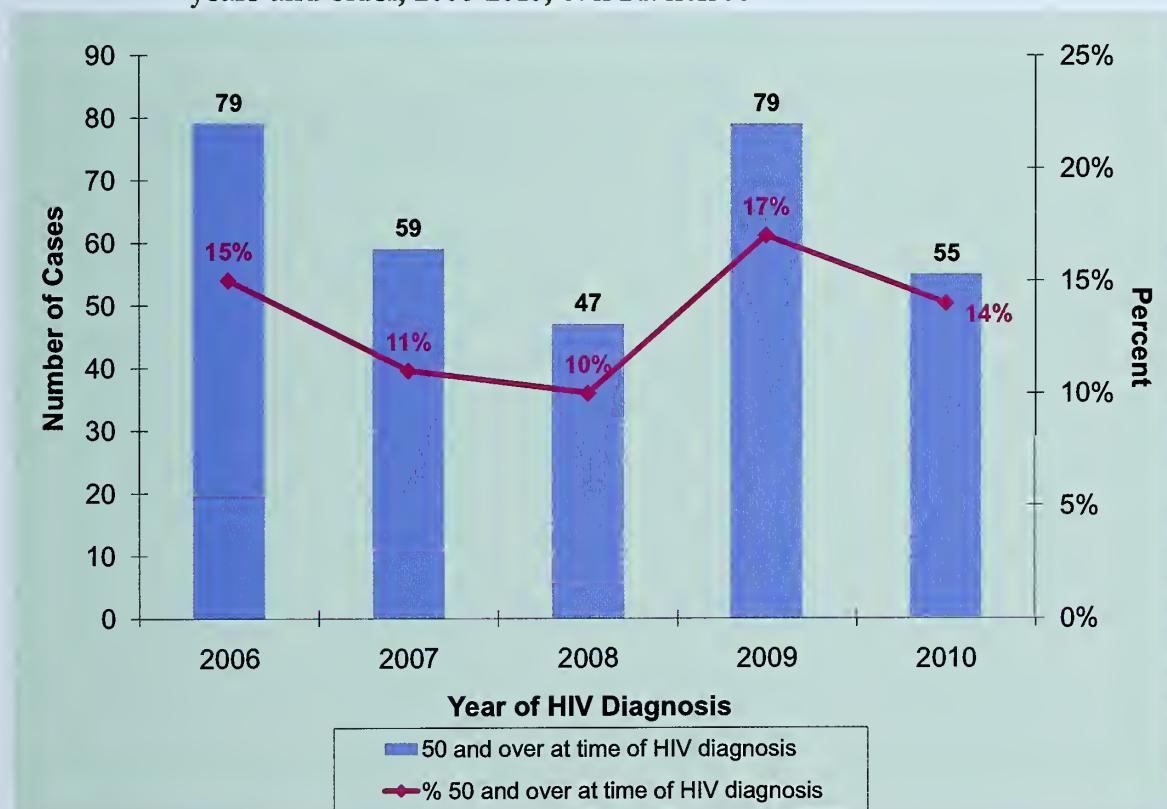
White	7%
African American	31%
Latino	34%
Asian/Pacific Islander	14%
Other/Multirace	14%

15 HIV/AIDS among the Aging Population

With the advent of highly active antiretroviral therapy (HAART), persons with HIV/AIDS are living longer; in particular, those aged 50 and older comprise an increasingly larger proportion of living cases. Between 2006 and 2010, the number of living HIV/AIDS cases ages 50 and over has increased 5,211 to 7,182, and the proportion increased from 35% in 2006 to 45% in 2010. Understanding the trends and characteristics of this emerging population can assist with prevention planning and care resource allocation.

Between 2006 and 2008, the number and percent of newly diagnosed HIV cases among persons aged 50 years and older decreased (Figure 15.1). In 2009, the number of cases diagnosed among those aged 50 years and older shows a noticeable increase despite the decrease in the total number of HIV cases diagnosed in that year (Figure 1.2). In 2010, the number of newly diagnosed cases among aged 50 years and older dropped 30% from the previous year to 55 cases and returned to levels previously observed.

Figure 15.1 Number and percent of persons diagnosed with HIV infection* at age 50 years and older, 2006-2010, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

HIV/AIDS among the Aging Population

Persons diagnosed with HIV/AIDS at the age of 50 years and older differ across various demographics when compared to persons diagnosed under the age of 50. A larger proportion of persons diagnosed with HIV at age 50 years and older are women, white, African Americans, heterosexuals and injection drug users (Table 15.1).

Table 15.1 Characteristics of persons diagnosed with HIV infection in 2006-2010 by age at diagnosis, San Francisco

	Age ≥ 50 years (N=319)		Age < 50 years (N=2,078)	
	Number	(%)	Number	(%)
Gender				
Male	275	(86)	1,878	(90)
Female	38	(12)	137	(7)
Transgender	6	(2)	63	(3)
Race/Ethnicity				
White	183	(58)	1,072	(52)
African American	77	(24)	290	(14)
Latino	41	(13)	454	(22)
Other/Unknown	17	(5)	262	(12)
Exposure Category				
MSM	174	(55)	1,478	(71)
IDU	51	(16)	109	(5)
MSM IDU	35	(11)	262	(13)
Heterosexual	32	(10)	114	(6)
Other/Unidentified	27	(8)	115	(5)

The majority of persons aged 50 years and older living with HIV/AIDS are male (93%), white (69%), and MSM (75%) (Table 15.2). The gender and exposure category characteristics of persons aged 50 years and older are similar to those under 50 years old. The 50 years and older population appears more likely to be white whereas those aged under 50 have a higher proportion of Latinos.

Table 15.2 Characteristics of living HIV/AIDS cases by age group, December 2010, San Francisco

	Age ≥ 50 years (N=7,182)		Age < 50 years (N=8,679)	
	Number	(%)	Number	(%)
Gender				
Male	6,678	(93)	7,919	(91)
Female	400	(6)	511	(6)
Transgender	104	(2)	249	(3)
Race/Ethnicity				
White	4,961	(69)	4,982	(57)
African American	1,084	(15)	1,076	(12)
Latino	796	(11)	1,767	(20)
Asian/Pacific Islander	234	(3)	591	(7)
Native American	32	(1)	67	(1)
Other/Unknown	75	(1)	196	(2)
Exposure Category				
MSM	5,353	(75)	6,182	(71)
IDU	603	(8)	497	(6)
MSM IDU	860	(12)	1,367	(16)
Heterosexual	175	(2)	298	(3)
Other/Unidentified	191	(3)	335	(4)

16 HIV/AIDS among Transgender Persons

Transgender status is determined through review of information in medical records. Information on transgender status has been collected since 1996. During 2007-2010, there were a total of 60 transgender persons diagnosed with HIV in San Francisco (Table 16.1). Transgender cases comprised approximately 3% of all HIV cases diagnosed in this time period. Compared to all HIV cases diagnosed in the same time period, transgender cases were more likely to be non-white, injection drug users, and younger.

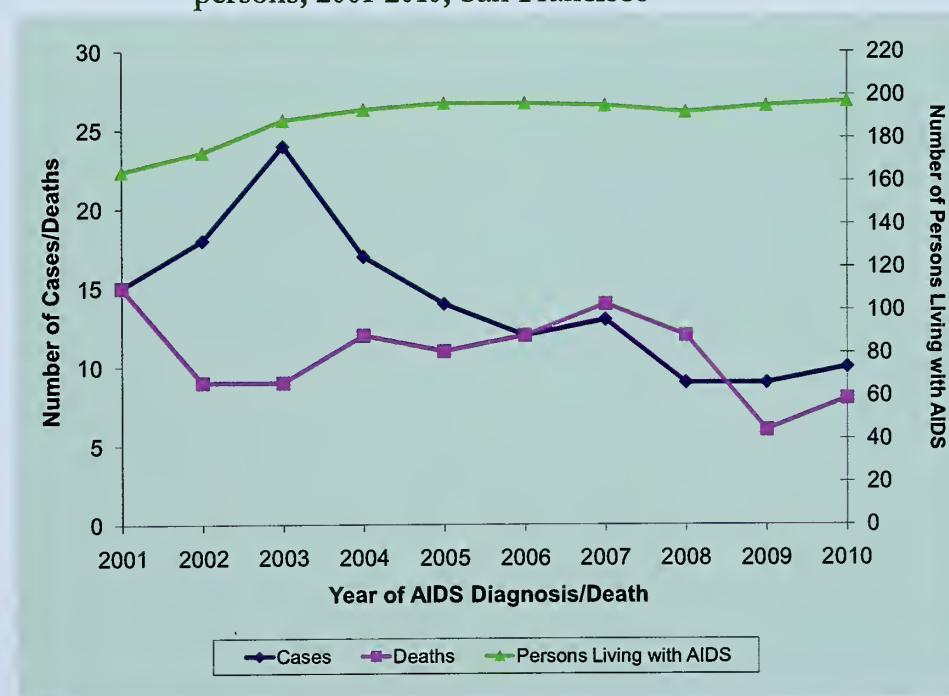
The numbers of transgender AIDS cases and deaths are small and fluctuate by year (Figure 16.1). The number of living transgender AIDS cases has leveled off since 2005. As of December 31, 2010 there were 197 living transgender AIDS cases.

Table 16.1 Characteristics of transgender* HIV cases compared to all HIV cases diagnosed in 2007-2010, San Francisco

	Transgender HIV Cases Diagnosed 2007-2010 (N=60)	HIV Cases Diagnosed 2007-2010 (N=1,877)
Race/Ethnicity		
White	20%	51%
African American	25%	15%
Latino	37%	21%
Other/Unknown	18%	13%
Injection Drug Use		
Yes	32%	19%
No	68%	81%
Age at Diagnosis (Years)		
13 - 29	43%	27%
30 - 39	28%	33%
40 - 49	22%	27%
50+	7%	13%

* See Technical Notes "Transgender Status."

Figure 16.1 AIDS cases, deaths, and prevalence among transgender persons, 2001-2010, San Francisco



Teach project

During 2010 in partnership with the San Francisco Department of Public Health HIV Prevention Section, we conducted a special study focusing on transfemales living in San Francisco. Transfemales are one of the populations most affected by HIV in San Francisco, however data on this hard to reach population are infrequently collected. We used Respondent Driven Sampling (RDS) to sample 314 transfemales over the age of 18. Key to RDS is a process of statistical adjustment that allows inference to the population. Table 16.2 describes the sample and provides estimates of the population. This study confirmed high HIV prevalence (39.5%) among transfemales in San Francisco. Ten percent of HIV-positive participants were unaware of their HIV infection. By race/ethnicity, HIV prevalence was 33.2%, 71.1%, 10.5%, 43.5% and 27.1% among Asian, African American, white, Latina and other race transfemales, respectively. Interestingly, 84.5% of transfemales have some sort of health insurance.

Table 16.2 Crude and Respondent Driven Sampling weighted characteristics among transfemales, Teach Project, San Francisco, 2010

	Crude (N= 314)		Adjusted	
	Number	(%)	(%)	95% Confidence Interval
Race/Ethnicity				
White	52	(16.6)	(17.5)	11.5 - 25.1
African American	88	(28.0)	(22.4)	14.1 - 31.6
Latino	96	(30.6)	(38.1)	26.2 - 50.5
Asian	21	(6.7)	(4.5)	1.5 - 6.5
Other	57	(18.2)	(17.5)	11.6 - 23.8
Age				
18 - 20	5	(1.6)	(1.6)	0.3 - 3.5
21 - 25	26	(8.3)	(7.7)	4.3 - 12.6
26 - 30	31	(9.9)	(9.3)	5.4 - 13.3
31 - 35	25	(7.9)	(9.2)	5.8 - 13.7
36 - 40	46	(14.7)	(16.6)	11.7 - 21.5
41 - 45	59	(18.8)	(19.0)	14.2 - 24.3
46 - 50	51	(16.2)	(14.2)	10.0 - 19.4
50+	71	(22.6)	(22.4)	15.8 - 27.9
Education				
Less than High School	84	(26.8)	(30.6)	23.6 - 36.3
High School	198	(63.1)	(62.2)	55.5 - 69.6
Some College	23	(7.3)	(4.5)	2.4 - 7.2
College Grad	9	(2.9)	(2.8)	0.9 - 5.3
Post-Grad	0	(0.0)	-	-
Income (yearly)				
<21,000	263	(83.8)	(86.5)	81.9 - 90.9
21,000 - 39,999	42	(13.4)	(11.2)	7.4 - 16.3
40,000 - 50,000	7	(2.2)	(1.5)	0.1 - 3.1
51,000 - 75,000	1	(0.3)	(0.4)	0 - 0.9
>75,000	1	(0.3)	(0.4)	0 - 1.1
Current Gender Identification				
Male	0	(0.0)	-	-
Female	150	(47.8)	(48.1)	41.0 - 55.5
Transfemale	164	(52.2)	(51.9)	44.5 - 59.0
Living Full Time as a Woman				
Yes	285	(90.8)	(88.7)	83.3 - 93.9
No	29	(9.2)	(11.3)	6.1 - 16.7
Ever Taken Hormones				
Yes	292	(92.9)	(93.2)	89.9 - 96.3
No	22	(7.1)	(6.8)	3.7 - 10.1
Ever Had Gender Enhancement Surgery				
Yes	73	(23.2)	(21.1)	15.2 - 26.4
No	241	(76.8)	(78.9)	73.6 - 84.8
Has Health Insurance				
Yes	267	(85.0)	(84.5)	79.8 - 89.6
No	47	(15.0)	(15.5)	10.4 - 20.2
HIV-Positive, Self-report				
	99	(31.5)	(36.2)	29.0 - 45.3
HIV-Positive, Tested				
	110	(35.0)	(39.5)	31.8 - 47.8

17 HIV/AIDS among Homeless Persons

A case is classified as homeless if, at the time of HIV or AIDS diagnosis, the medical record states that the patient is homeless or the patient's address is one of the following: (1) a known homeless shelter, (2) a health care clinic, or (3) a free postal address not connected to a residence ('general delivery'). Cases with missing information on residence are not classified as homeless.

Figure 17.1 shows a decline in number of homeless AIDS cases diagnosed between 2001 and 2005. Since 2000, the proportion of homeless cases among all AIDS cases diagnosed per year ranged between 6% and 19%. For 2010, almost one-fifth of diagnosed AIDS cases (19%) were homeless at the time of diagnosis.

Among all cases diagnosed with HIV infection, the number of homeless cases increased slightly between 2006 to 2010 (Figure 17.2). Homeless persons accounted for 9% to 13% of all cases diagnosed with HIV infection each year. For persons diagnosed in 2010, 13% of cases diagnosed with HIV infection were homeless at the time of HIV diagnosis.

Figure 17.1 Number and percent of homeless AIDS cases by year of diagnosis, 2001-2010, San Francisco

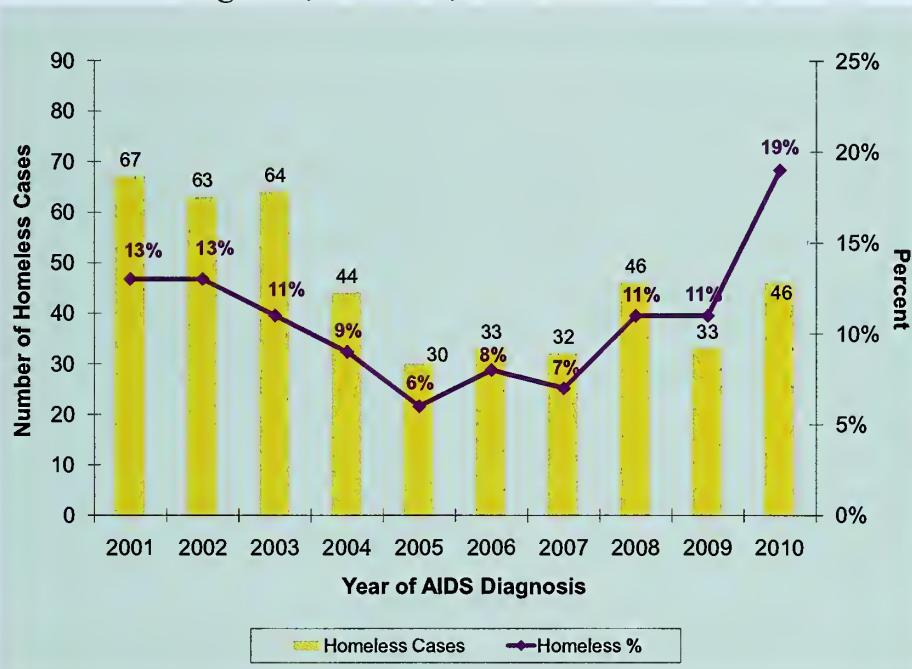
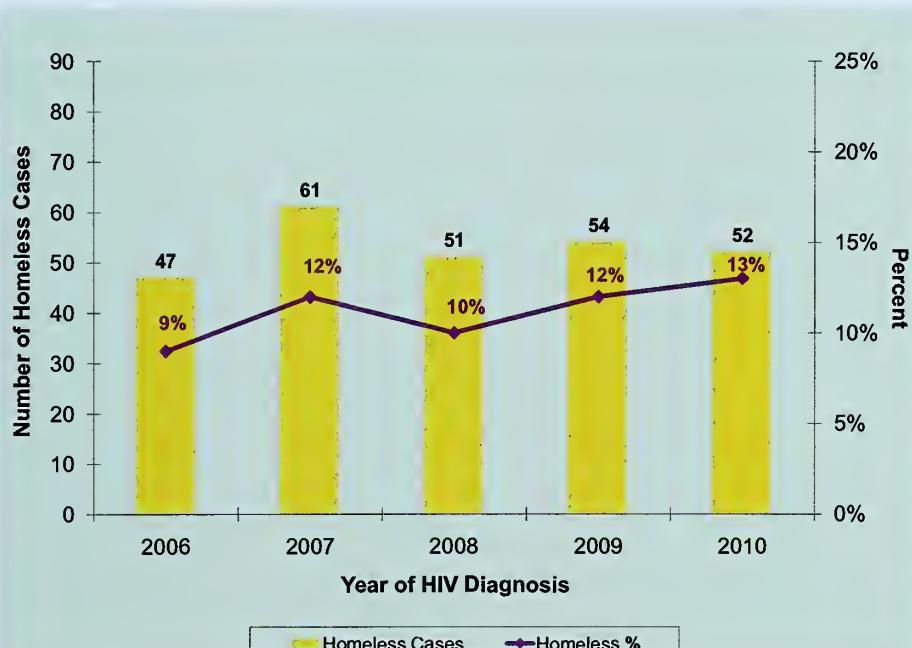


Figure 17.2 Number and percent of homeless cases diagnosed with HIV infection* by year of diagnosis, 2006-2010, San Francisco



* Includes persons with HIV/AIDS by year of their initial HIV diagnosis.

HIV/AIDS among Homeless Persons

Compared to all HIV/AIDS cases diagnosed in 2006 to 2010, persons who were homeless at their HIV/AIDS diagnosis (diagnosed in 2006 to 2010) were more likely to be women, transfemale, African American, and injection drug users. (Table 17.1).

Table 17.1 Characteristics of homeless HIV/AIDS cases compared to all HIV/AIDS cases diagnosed in 2006-2010, San Francisco

	Homeless HIV/AIDS Cases 2006-2010 (N=265)	HIV/AIDS Cases 2006-2010 (N=2,397)
Gender		
Male	79%	90%
Female	14%	7%
Transfemale*	7%	3%
Race/Ethnicity		
White	45%	52%
African American	31%	15%
Latino	17%	21%
Other/Unknown	7%	12%
Exposure Category		
MSM	37%	69%
IDU	27%	7%
MSM IDU	25%	12%
Heterosexual	6%	6%
Other/Unidentified	5%	6%
Age at Diagnosis (years)		
0 - 19	2%	2%
20 - 29	28%	24%
30 - 39	24%	33%
40 - 49	29%	27%
50+	18%	13%

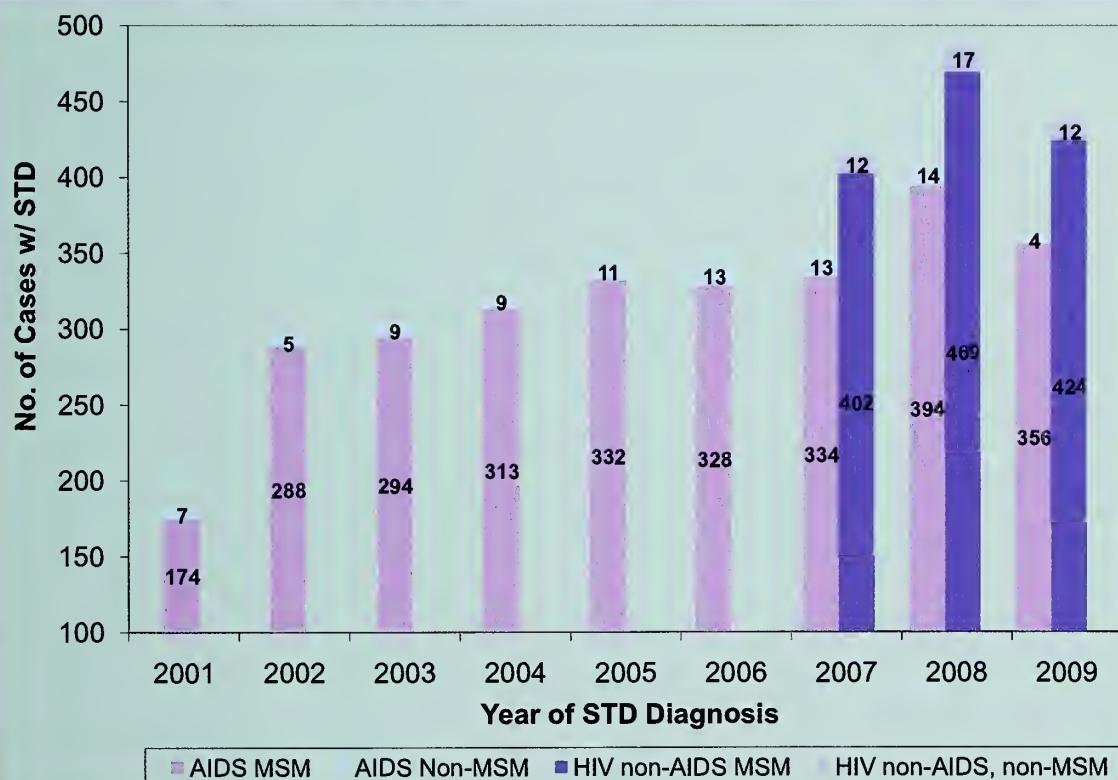
* Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status."

18 Sexually Transmitted Diseases among Persons with HIV/AIDS

The occurrence of sexually transmitted disease (STD) diagnosis among persons living with HIV/AIDS is an important marker for sexual risk behavior and potential HIV transmission. Diagnosis of STD occurring among persons with HIV/AIDS was determined through a computerized match of the HIV/AIDS and STD case registries through 2009. The STD registry included persons reported with gonorrhea, chlamydia, non-gonococcal urethritis, or infectious syphilis. Cases of STDs among persons living with AIDS had a pronounced increase in 2002, a moderate increase in 2008, followed by a decrease in 2009 (Figure 18.1).

HIV non-AIDS cases reported after 2006 were included in the match to identify STD diagnosis among persons with HIV infection who had not developed AIDS. Similar to the trend among persons living with AIDS, the number of STD cases among persons living with HIV non-AIDS increased from 2007 to 2008, and declined in 2009. Increases in STDs among persons with HIV/AIDS in 2002 and 2008 coincided with steep increases in early syphilis reported in 2002 and the moderate rise in 2008, particularly among MSM diagnosed with HIV (Figure 9.7). In 2009, rectal gonorrhea and male gonococcal proctitis continued to decline among HIV-positive MSM (Figure 9.6). All STDs occurred after the HIV/AIDS diagnosis, indicating unprotected sex among persons with known HIV infection.

Figure 18.1 Number of HIV/AIDS cases diagnosed with an STD by year of STD diagnosis, 2001-2009, San Francisco



19 Access to Care among Persons with HIV/AIDS

Estimate of unmet need for HIV medical care

We conducted an analysis to estimate unmet need for primary care for San Francisco residents diagnosed with HIV/AIDS. Persons with HIV/AIDS who did not have at least one CD4 or viral load test or did not receive antiretroviral therapy during the 12-month period from July 1, 2008 through June 30, 2009 were considered to have an unmet need for care (see Technical Notes, Estimate of Unmet Need, for data sources and methods).

We estimated that there were 10,049 persons living with AIDS (PLWA) and 8,676 persons living with HIV non-AIDS (PLWH) in San Francisco during this time. A total of 971 (10%) PLWA and 2,353 (27%) PLWH did not receive primary medical care during that time period (Table 19.1). The unmet need for care among PLWA ranged from 6% to 13%. A greater proportion of PLWH had unmet need for care than PLWA. This most likely reflects asymptomatic disease among persons with HIV who had not advanced to AIDS. The proportion of PLWH with unmet need for care, particularly women, highlights the need for prompt referral of persons diagnosed with HIV to medical care and for expanded efforts to retain patients in medical care.

Table 19.1 Unmet need* by demographic and risk characteristics among persons living with HIV/AIDS, July 2008-June 2009, San Francisco

	Persons Living with AIDS N=10,049		Persons Living with HIV/non-AIDS N=8,676		All Persons Living with HIV/AIDS N=18,725	
	with unmet need Number	with unmet need %	with unmet need Number	with unmet need %	with unmet need Number	with unmet need %
Total	971	10%	2,353	27%	3,324	18%
Gender						
Male	924	10%	1,962	25%	2,886	17%
Female	47	8%	391	52%	438	33%
Race/Ethnicity						
White	675	10%	1,388	27%	2,063	18%
African American	133	9%	391	28%	524	19%
Latino	124	8%	331	24%	455	16%
Asian/Pacific Islander	29	6%	118	26%	147	16%
Other/Unknown	10	11%	125	49%	135	38%
Age in Years (as of June 2009)[#]						
20 - 29	18	11%	167	26%	185	23%
30 - 39	135	13%	618	32%	753	25%
40 - 49	427	11%	939	27%	1,366	19%
50 - 59	276	8%	488	25%	764	14%
60+	113	8%	136	21%	249	12%

* See Technical Notes "Estimate of Unmet Need."

The age category 0-19 years was omitted due to the small sample size.

Assessing access to medical care using CD4 or viral load test as a marker for care

Despite widespread efforts to promote HIV testing, prevention and care, a significant percentage of HIV infected individuals are not receiving or accessing care early in their infection. We assessed receipt of medical care after HIV diagnosis using initial CD4 or viral load test as a marker for entry into medical care. The majority (89%) of persons diagnosed with HIV during 2007-2009 received medical care within 12 months of their HIV diagnosis (Table 19.2). Eighty-six percent of those diagnosed during this time period have CD4 tests within 12 months of HIV diagnosis. The median of the initial CD4 count was 388 cells/ μ L.

Certain subgroups were less likely to access care within 12 months after diagnosis than others, including persons with HIV non-AIDS, non whites, and persons reported without a risk. Lower initial CD4 count may indicate diagnosis late in the course of HIV disease or delayed entry into care. People diagnosed with AIDS, non whites, heterosexuals, and persons over 50 years of age had a lower initial CD4 count. The CD4 count closest to HIV diagnosis increased over time from 2007 to 2009.

Table 19.2 Percent of HIV cases diagnosed between 2007 and 2009 receiving at least one CD4 or viral load test within 12 months of HIV diagnosis and the median of initial CD4 counts, San Francisco

	Number*	Percent received at least one CD4 or viral load test within 12 months following HIV diagnosis	Median of initial CD4 counts# (cells/ μ L)
Total	1,570	89%	388
HIV Status			
HIV infection (not AIDS)	1,198	87%	452
Concurrent HIV and AIDS diagnosis‡	146	100%	133
AIDS diagnosed \geq 1 months after HIV diagnosis	226	95%	273
Gender			
Male	1,456	89%	388
Female	114	92%	386
Race/Ethnicity			
White	804	93%	426
African American	243	86%	351
Latino	337	86%	328
Asian/Pacific Islander	134	84%	319
Other/Unknown	52	85%	464
Exposure Category			
MSM	1,108	90%	389
IDU	108	93%	387
MSM IDU	185	90%	437
Heterosexual	92	93%	288
Other/Unidentified	77	65%	340
Age at HIV Diagnosis (years)			
13 – 29	402	88%	428
30 – 39	541	89%	410
40 – 49	429	90%	355
50+	198	91%	315
Year of HIV Diagnosis§			
2007	565	89%	372
2008	520	90%	393
2009	485	89%	415

* Excludes 23 cases that were diagnosed at a facility outside of San Francisco and 30 cases who died within six months of diagnosis.

Median of initial CD4 counts measured within 12 months following HIV diagnosis.

‡ AIDS was diagnosed in the same month and year of HIV infection diagnosis.

§ Data include persons who were diagnosed in 2007-2009 based on a confirmed HIV test and had a self report of previous HIV test prior to 2007.

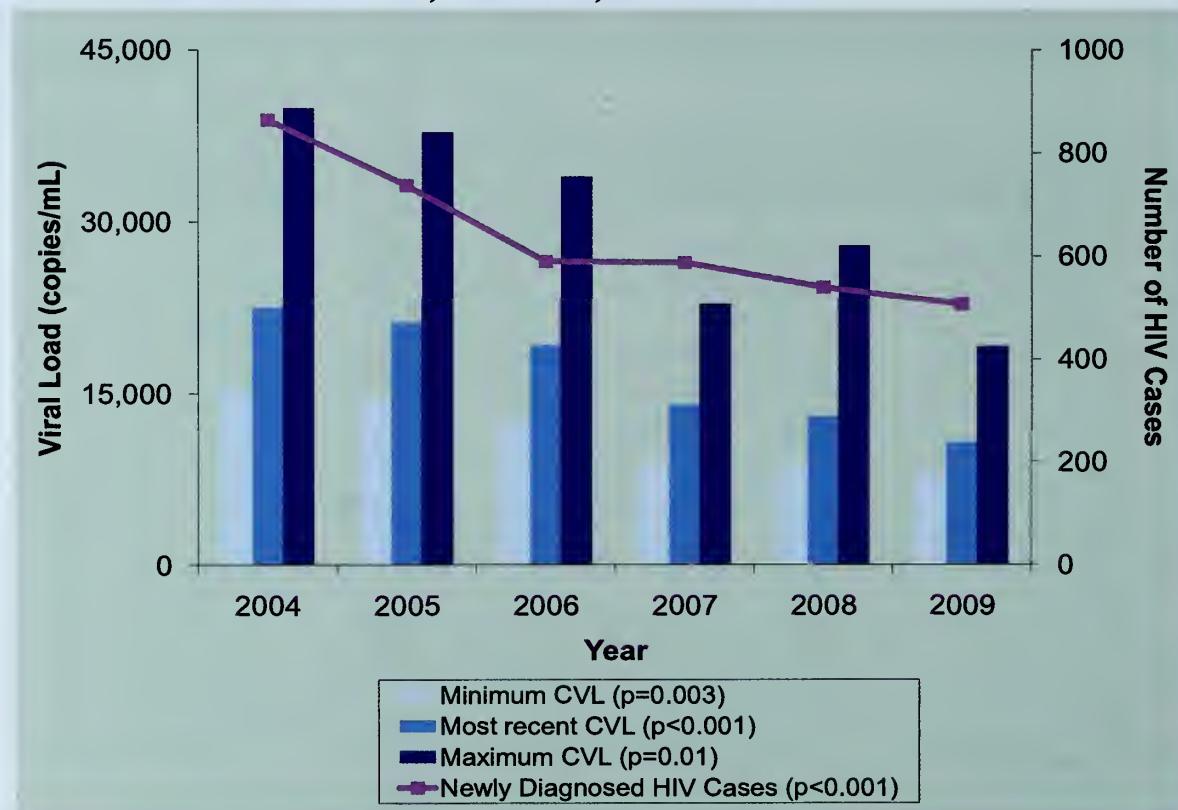
Access to Care among Persons with HIV/AIDS

Community viral load

We estimated community viral load (CVL) in three ways: taking the average of the most recent viral load, average of the lowest viral load, and average of the highest viral load, for cases who had a viral load in the year. We assessed the relationship of these CVL measures to newly diagnosed and reported HIV cases using Poisson regression.

Most recent, minimum, and maximum measures of CVL all declined significantly during 2004-2009 ($p < 0.001$, $p=0.003$, and $p= 0.010$) and were associated with decreases in newly diagnosed and reported HIV cases (all $p < 0.001$) (Figure 19.1).

Figure 19.1 Minimum, most recent, maximum community viral load and newly diagnosed HIV cases, 2004-2009*, San Francisco



* Data include persons receiving care in San Francisco who resided in other jurisdictions at time of HIV diagnosis.

20 Special Report: Medical Monitoring Project

The Medical Monitoring Project (MMP) is a national ongoing CDC-funded HIV/AIDS supplemental surveillance project. Multi-stage probability proportional-to-size sampling is used to recruit HIV-infected adults receiving care at outpatient health facilities. Information about care utilization, clinical outcomes, resource needs, and HIV risk behaviors is collected through patient interviews and medical chart reviews. MMP data provide information unavailable through routine surveillance and aim to:

- describe clinical outcomes and co-morbidities among HIV-positive patients in care
- characterize HIV care and ancillary support services received and the quality of these services
- estimate the prevalence of behaviors that can transmit HIV infection
- determine access to and use of prevention services among HIV-positive patients in care
- identify gaps in HIV care and supportive service needs to target HIV prevention and care efforts
- measure adherence to antiretroviral therapy regimens

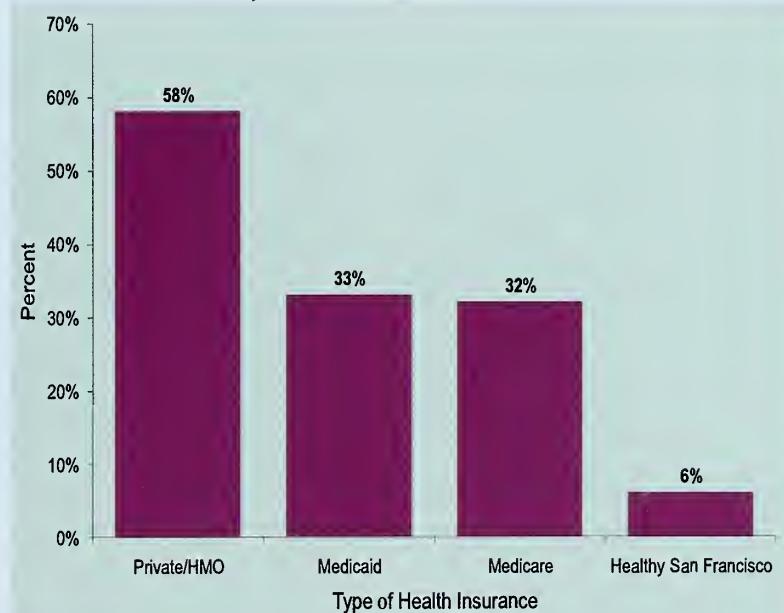
Sociodemographic characteristics

We interviewed 541 MMP participants in San Francisco from 2007 to 2009. Of these, 62% were recruited from private/HMO medical care facilities and 38% from public facilities. The majority of participants were male (94%), 40 years or older at time of interview (84%), white (57%), identified as gay/lesbian (80%) and had some college or higher education (81%). Homelessness in the past 12 months was reported by 11% of participants.

Health insurance coverage

Most participants reported being insured for the entire 12 months prior to interview (89%), while 6% reported being insured for part of the past 12 months and 4% were not insured at all during the past 12 months. Among those insured at least part of the past 12 months, 58% reported having private/HMO insurance, 33% Medicaid, 32% Medicare and 6% reported receiving care through the Healthy San Francisco program (Figure 20.1).

Figure 20.1 Type of health insurance* during the 12 months prior to interview, MMP participants, 2007-2009, San Francisco



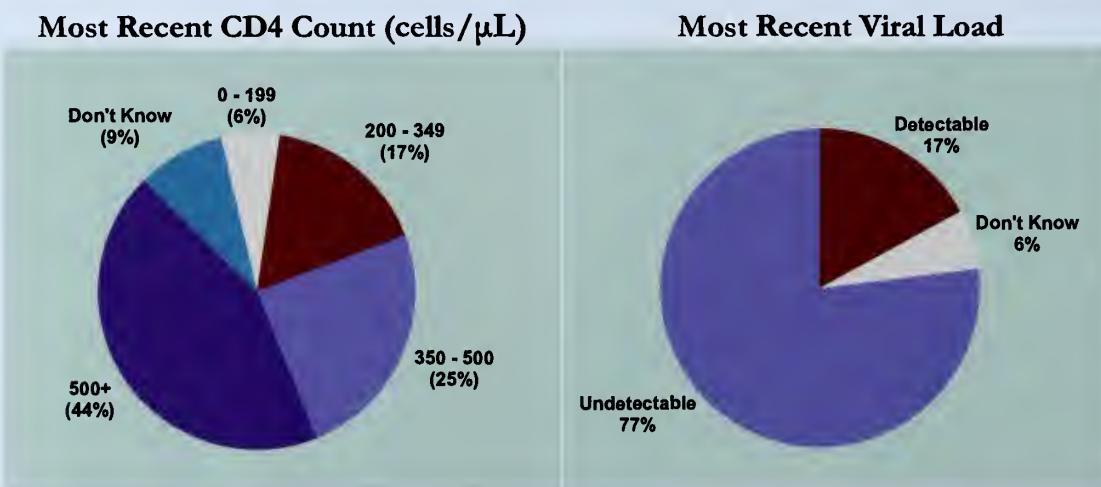
* Health insurance types were not mutually exclusive; patients could report more than one type of health insurance.

HIV care

Nearly all MMP participants reported having a usual place for routine care (99.8%), ever having a CD4 test (99.1%) and ever having a viral load test (98.7%). Figure 20.2 shows participants' self reported most recent CD4 and viral load test results. The majority had a CD4 count over 350 cells/ μL (69%) and undetectable viral load (77%). Forty-two percent reported ever being told by a physician that they had AIDS. Many participants had a previous HIV test before their first HIV positive test ($N=143$, 43%). Fifty-seven (17%) reported being offered partner notification services at the time of their HIV diagnosis and 36% reported someone at their provider's office discussed safe sex practices with them in the past 12 months.

Ever initiating antiretroviral therapy (ART) was reported by 503 (93%) participants and 483 (89%) reported taking ART at the time of the interview. Ten percent of the participants taking ART at time of interview reported taking a drug holiday in the past 12 months, defined as purposely stopping ART for at least two consecutive days. Further analysis found that participants who were over the age of 50 were more likely than younger participants to be taking ART at the time of interview. Participants who reported a high school education or less compared to those with some college or higher, being homeless at any point in the past 12 months, being without health insurance for part or the entire past 12 months and those who were incarcerated in the past 12 months were less likely to be on ART at the time of interview.

Figure 20.2 Most recent self-reported CD4 count and viral load test results, MMP participants, 2007-2008*, San Francisco



* This information was only collected during the 2007-2008 cycles.

Supportive services

SSDI benefits, assistance finding dental care, medicine through AIDS drug assistance program (ADAP), mental health counseling and HIV case management were the most frequently reported supportive services needed by HIV-infected adults in care in San Francisco. Table 20.1 displays the services not needed, services needed and received, and services needed but not received. Unmet needs, defined as a service reported needed but not received in the past 12 months, included assistance finding dental care (12%), mental health counseling (10%), HIV peer support (9%), social services (6%) and HIV case management (6%). Overall, 28% of all participants reported at least one unmet need in the past 12 months.

Table 20.1 Top five unmet needs for supportive services reported by MMP respondents, 2007-2009, San Francisco

Service	Service		Service	
	Service Not Needed Number (%)	Needed and Received Number (%)	Service Needed but Not Received Number (%)	
Assistance finding dental care	276 (51)	201 (37)	64 (12)	
Mental health	326 (60)	163 (30)	52 (10)	
HIV peer support*	150 (71)	42 (20)	19 (9)	
Social services [#]	232 (71)	78 (24)	19 (6)	
HIV case management	352 (65)	155 (29)	34 (6)	

* Data are available for 2009 only.

Data are available for 2007 and 2008 only.

Sexual behavior

Table 20.2 displays sexual behavior among sexually active MMP participants in San Francisco. The majority of men who had sex with men (MSM) reported two or more partners in the past 12 months (71%), while the majority of men who had sex with women (MSW) and women who had sex with men (WSM) reported one partner (72% and 100%, respectively). Approximately one-third of sexually active participants had a STD diagnosis in the past 12 months. Most participants reported that both partners disclosed their HIV status before sex; 80% of MSM, 56% of MSW and 83% of WSM. Sixty-six percent of MSM, 31% of MSW and 83% of WSM reported unprotected anal or vaginal sex with their most recent sexual partner in the 12 months prior to the interview.

Table 20.2 Sexual behavior among sexually active MMP participants, 2007-2008, San Francisco

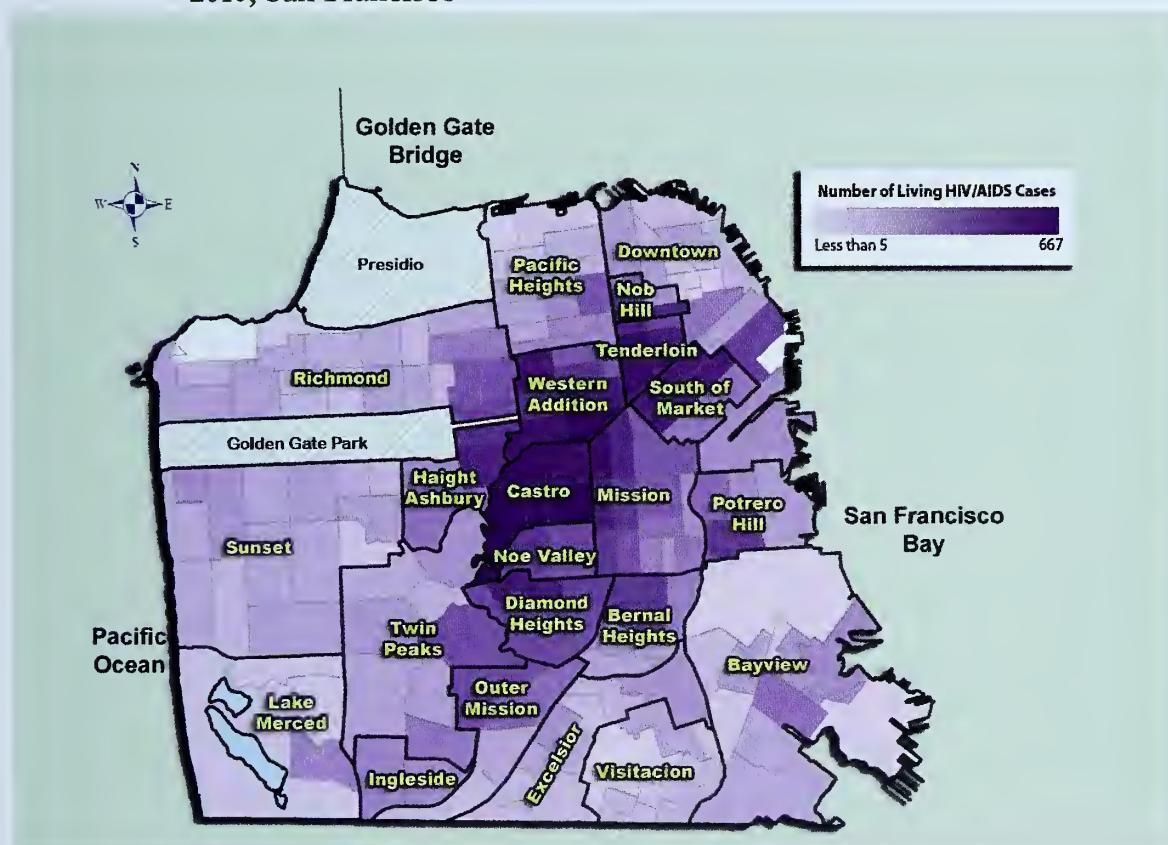
	Men Who Have Sex With Men*		Men Who Have Sex With Women*		Women Who Have Sex With Men	
	Number	(%)	Number	(%)	Number	(%)
Total	235	(100)	18	(100)	6	(100)
Sexual behavior past 12 months						
Number of partners						
1	69	(29)	13	(72)	6	(100)
2-9	85	(36)	4	(22)	0	(0)
10+	81	(35)	1	(6)	0	(0)
Unprotected Anal/Vaginal Sex	131	(72)	5	(31)	6	(100)
STD diagnosis past 12 months	61	(26)	5	(28)	2	(33)
Any exchange sex	13	(6)	1	(6)	0	(0)
Sexual behavior with most recent sexual partner						
Type of last partner						
Main	123	(53)	10	(56)	6	(100)
Casual	110	(47)	8	(44)	0	(0)
Unprotected Anal/Vaginal Sex	103	(66)	4	(31)	5	(83)
Drugs and/or Alcohol before or during sex	65	(28)	7	(39)	0	(0)
Both partners disclosed status before sex	166	(80)	10	(56)	5	(83)
Unprotected sex with unknown status/serodiscordant partner	33	(14)	2	(11)	3	(50)

* Men who have sex with men and men who have sex with women are not mutually exclusive categories.

21 Geographic Distribution of HIV/AIDS

Map 21.1 illustrates the geographic distribution of the number of HIV/AIDS living cases in San Francisco by census tract as of December 31, 2010. The data capture the census tract and neighborhood at HIV/AIDS diagnosis for San Francisco residents and do not necessarily reflect current residence. Census tract level data provide an enhanced understanding of varying numbers of cases within a neighborhood. The Castro has the highest number of living cases ($n=2,749$) followed by the Western Addition ($N=1,754$), Mission ($N=1,463$), and Tenderloin ($N=1,438$).

Map 21.1 Geographic distribution of persons living with HIV/AIDS, December 2010, San Francisco

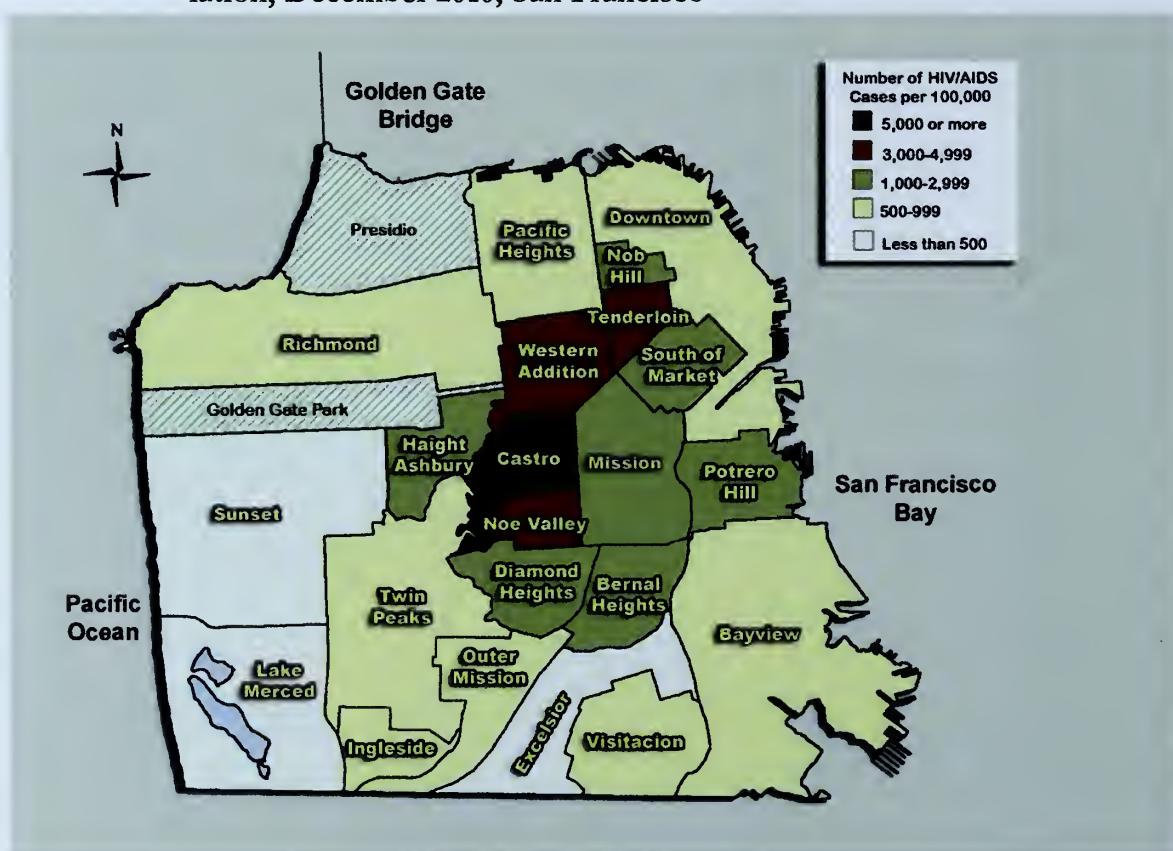


* Living homeless HIV/AIDS cases ($N=1,001$) are not displayed on this map.

Geographic Distribution of HIV/AIDS

Map 21.2 illustrates the HIV/AIDS prevalence rates among San Francisco residents using the newly released 2010 Census data to estimate the total population size in each neighborhood. The prevalence rate is defined as the number of living HIV/AIDS cases divided by the total population in each neighborhood. The Castro has the highest prevalence rate of 11,558 cases per 100,000 (11.6%), which is more than twice as high as Western Addition, the second highest prevalence rate at 4.4%.

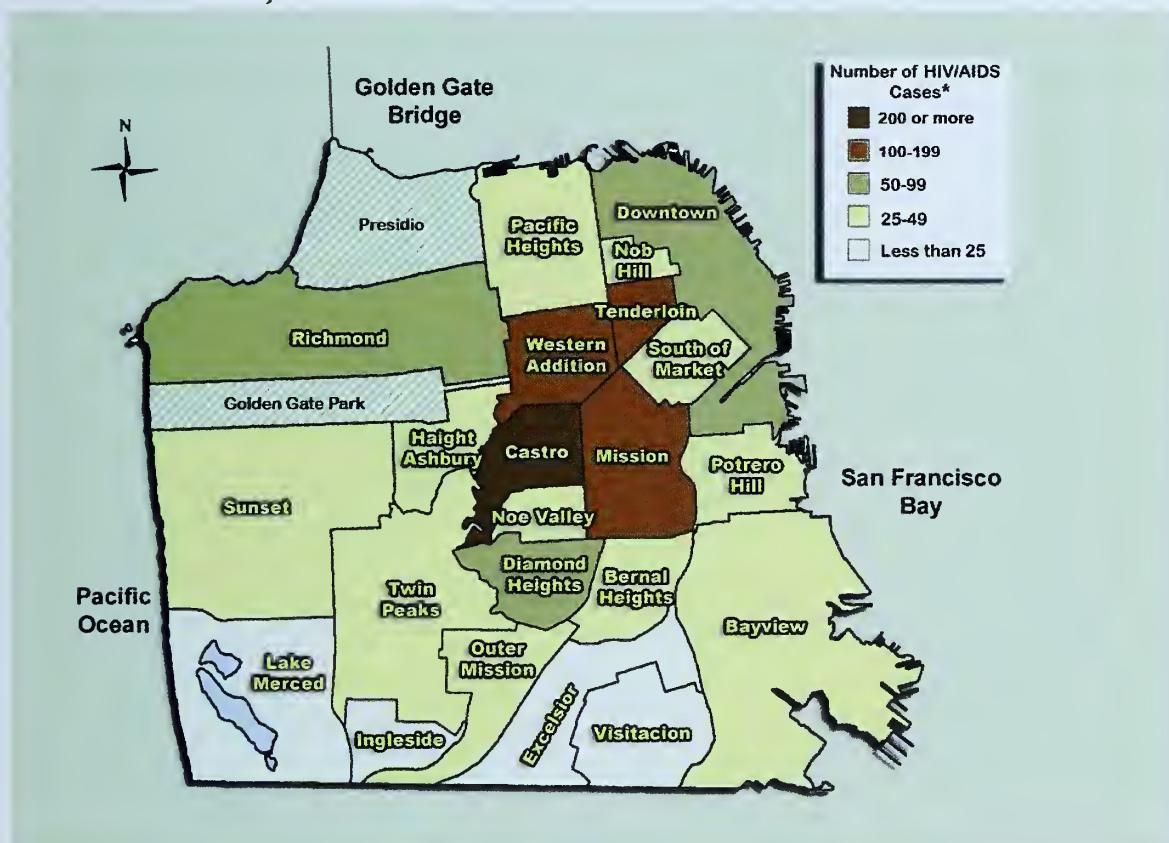
Map 21.2 Geographic distribution of HIV/AIDS prevalence rates per 100,000 population, December 2010, San Francisco



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The newly diagnosed HIV/AIDS cases from 2006 to 2010 were examined and mapped by exposure category. Map 21.3 shows the Castro with the highest number of MSM cases (N=251), followed by the adjacent neighborhoods of Mission, Western Addition, and the Tenderloin.

Map 21.3 Geographic distribution of HIV/AIDS cases diagnosed in 2006-2010 among MSM, San Francisco

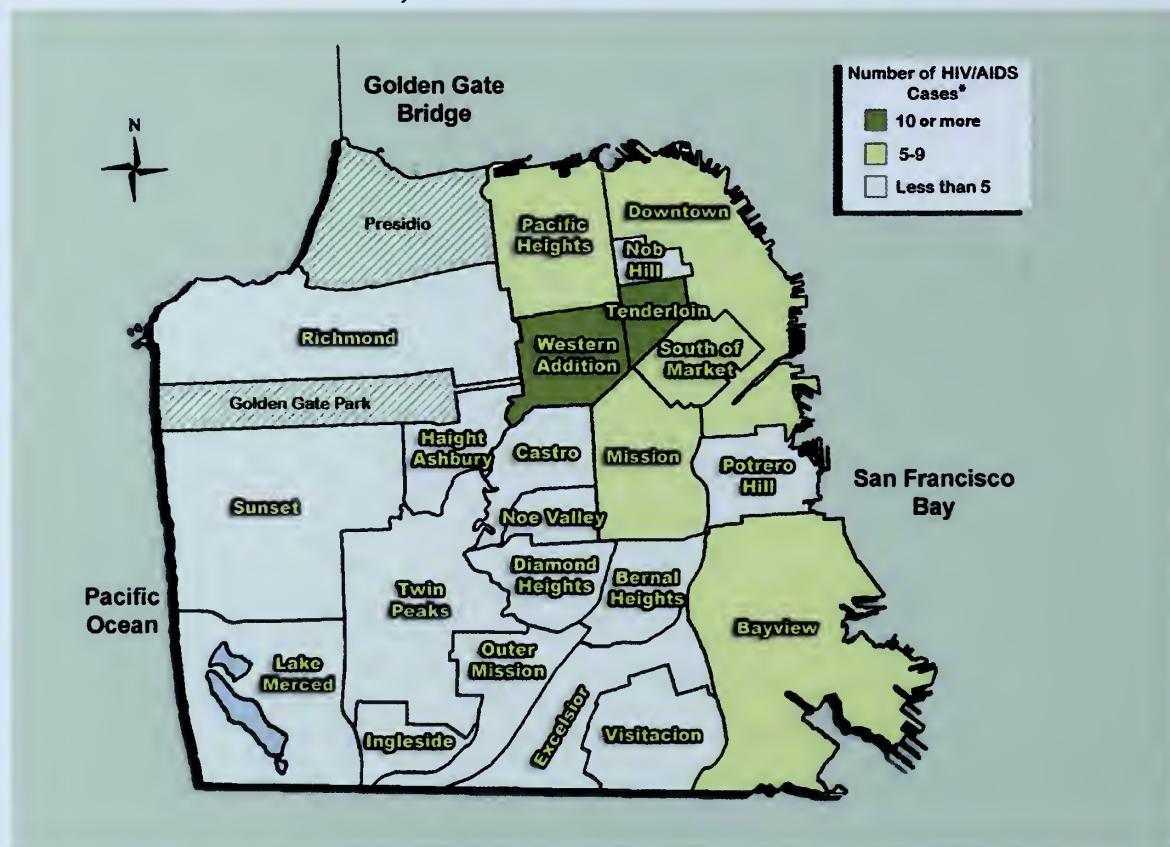


* Newly diagnosed homeless MSM cases in this time period (N=92) are not displayed on the map.

Geographic Distribution of HIV/AIDS

Those who were homeless at time of diagnosis represent the majority of newly diagnosed HIV/AIDS cases among injection drug users (IDU) in 2006 to 2010 (N=67, not displayed). The neighborhoods of Tenderloin and Western Addition also had higher numbers of IDU HIV/AIDS cases (N=18 and N=11, respectively) (Map 21.4).

Map 21.4 Geographic distribution of HIV/AIDS cases diagnosed in 2006-2010 among non-MSM IDU, San Francisco

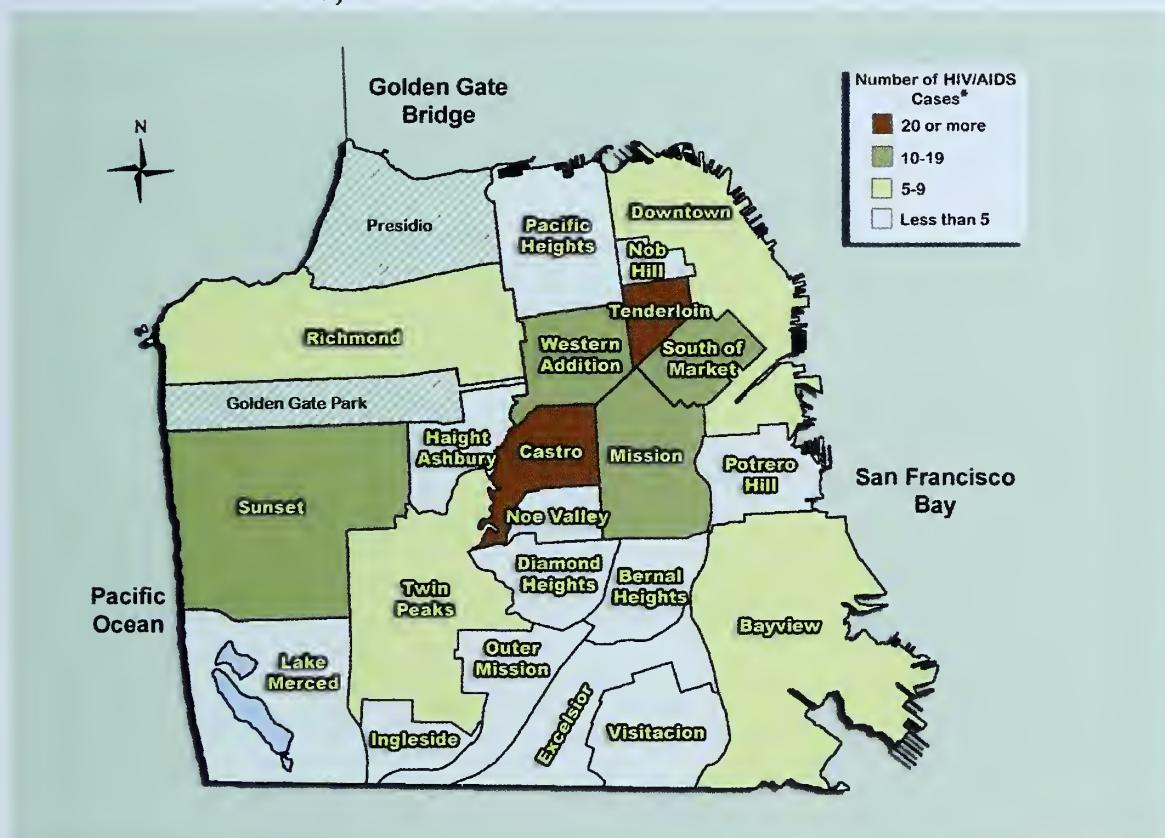


* Newly diagnosed homeless non-MSM IDU cases in this time period (N=67) are not displayed on the map.

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Map 21.5 illustrates the neighborhood-level distribution of newly diagnosed HIV/AIDS cases among MSM IDU. The homeless population (not displayed) comprised the highest number of diagnosed HIV/AIDS cases in 2006-2010 (N=68), followed by the Tenderloin (N=42). Similar to the distribution of MSM cases, the bordering neighborhoods of South of Market, Mission, Western Addition, and Castro also exhibited higher numbers of cases.

Map 21.5 Geographic distribution of HIV/AIDS cases diagnosed in 2006-2010 among MSM IDU, San Francisco

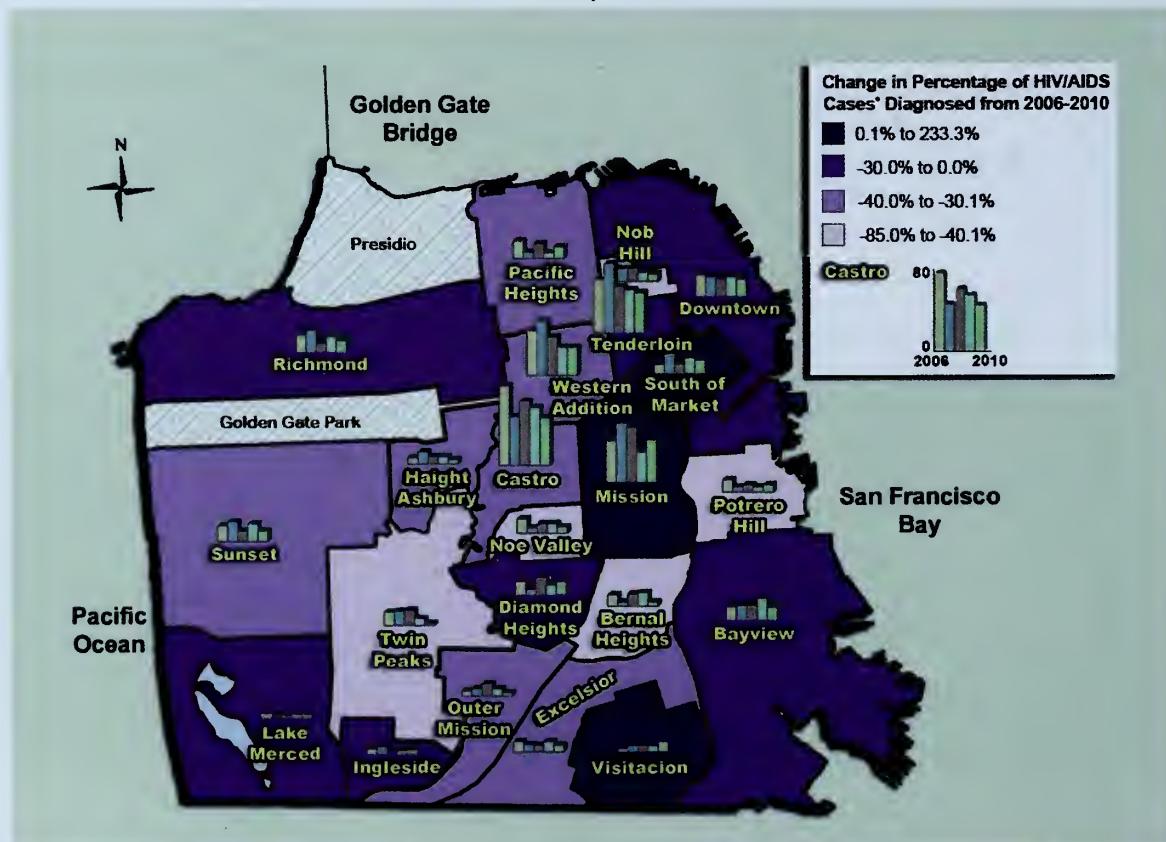


* Newly diagnosed homeless MSM IDU cases in this time period (n=68) are not displayed on the map.

Geographic Distribution of HIV/AIDS

We examined the distribution of newly diagnosed HIV/AIDS cases from 2006 through 2010 by neighborhood. The bars in each neighborhood show the number of cases diagnosed from 2006 to 2010 and the relative fluctuations per year. The base color for each neighborhood is the percentage change in the number of cases diagnosed between 2006 and 2010. The percentage change was calculated as the difference in the number of cases diagnosed between 2006 and 2010 divided by the number of cases in 2006. Map 21.6 shows the majority of the neighborhoods in the city have reported a decrease in HIV diagnoses. Despite the general decrease in newly diagnosed cases in San Francisco, some neighborhoods report increasing numbers of cases from 2006 to 2010 (South of Market, Mission, Visitacion). In particular, Visitacion Valley has continued to show an increase in cases since 2006 although the numbers are small. Newly diagnosed homeless HIV/AIDS cases increased 10.6% during this time period (not displayed).

Map 21.6 Geographic distribution of changes in number of HIV/AIDS cases diagnosed between 2006 and 2010, San Francisco

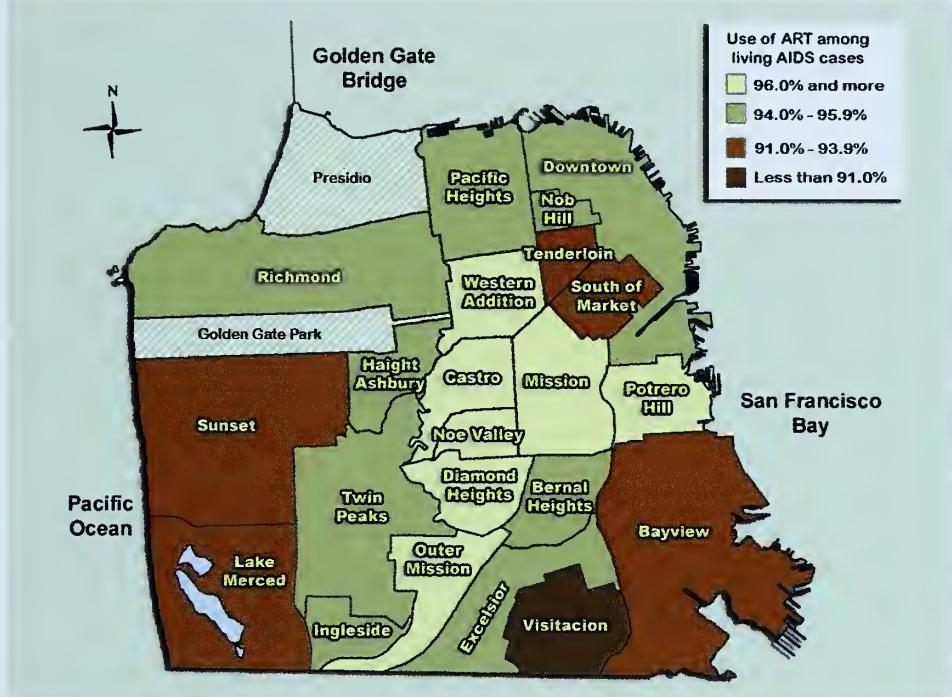


* Newly diagnosed homeless HIV/AIDS cases in this time period are not displayed on the map.

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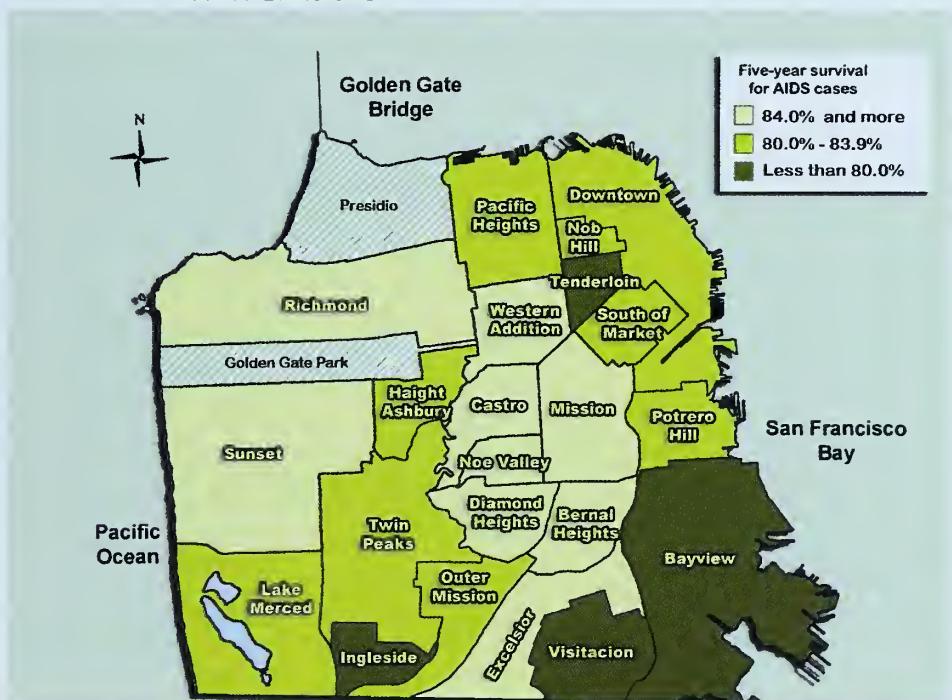
A high correlation between levels of antiretroviral therapy (ART) use and survival following AIDS for neighborhoods is noted in Maps 21.7 and 21.8. High levels of ART use are observed throughout the city in neighborhoods that also exhibited higher percentage of five-year AIDS survival. Neighborhoods with lower use of ART and lower AIDS survival included Visitacion, Bayview, and Tenderloin. Homeless persons at time of AIDS diagnosis had the lowest percentage of receiving ART (82%).

Map 21.7 Geographic distribution of ART use among persons living with AIDS, December 2010, San Francisco



* Data exclude persons who were lost-to-follow-up.

Map 21.8 Geographic distribution of five-year survival after AIDS for persons diagnosed with AIDS between 1996 and 2009, San Francisco

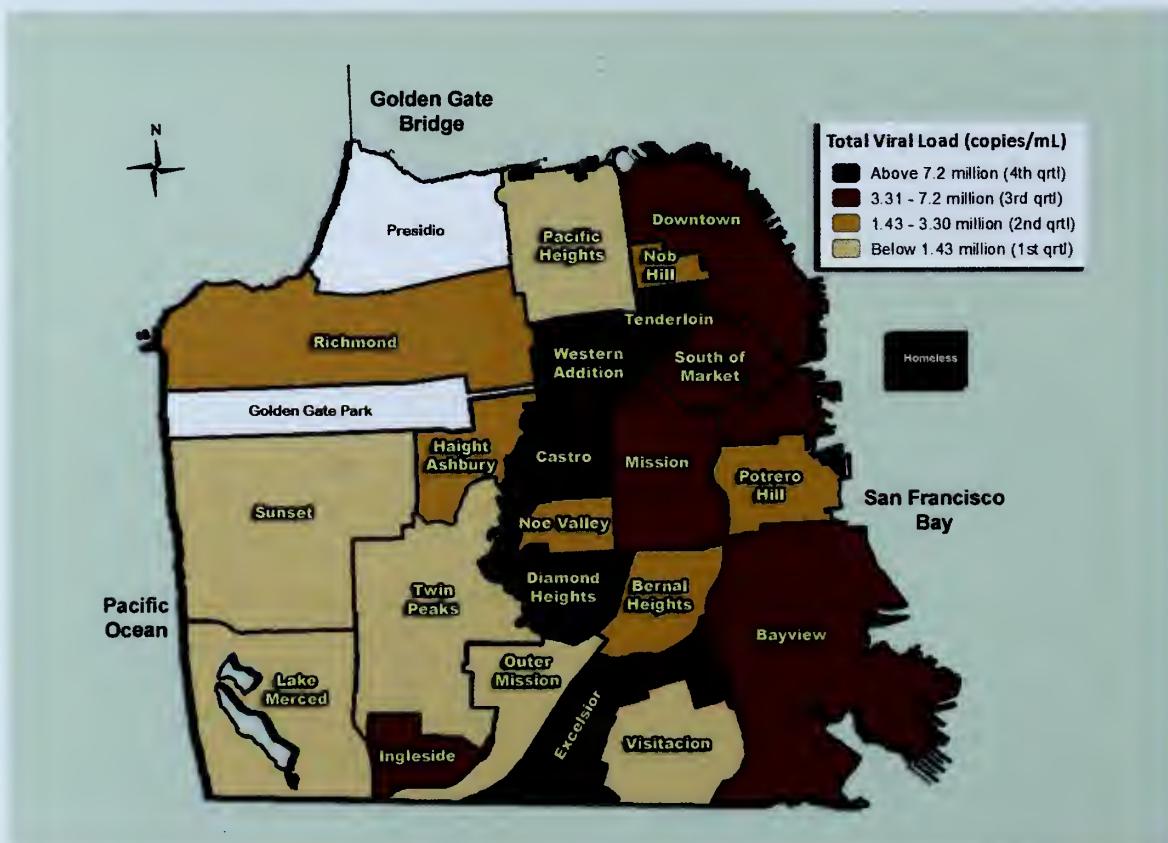


Geographic Distribution of HIV/AIDS

Community viral load (CVL) is a new population-based biomarker of community-level viral burden or overall level of infectiousness. Total CVL, defined as the sum of the most recent viral loads of all reported HIV infected individuals in a community, reflects the total burden of HIV disease. Mean CVL is the total of the most recent viral load divided by the number of HIV-infected individuals in the community. These two measures of CVL may reflect both the success of HIV prevention and care interventions (Das et al. PLoS ONE 2010).

For 2009, Map 21.9 shows the geographic distribution of total CVL; total CVL is highest where there is the greatest number of people living with HIV/AIDS. However, both the Castro and the Tenderloin have similar total CVL, even though the Castro has twice as many people living with HIV/AIDS than the Tenderloin. This may reflect higher viral loads among the residents of the Tenderloin as compared to those in the Castro.

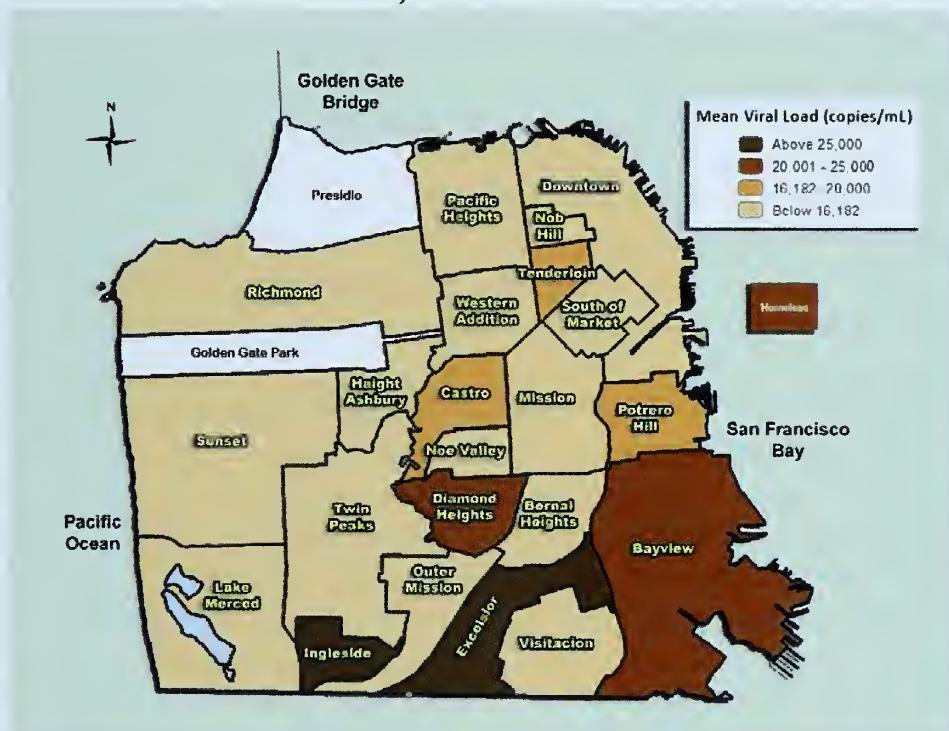
Map 21.9 Geographic distribution of total community viral load, December 2009, San Francisco



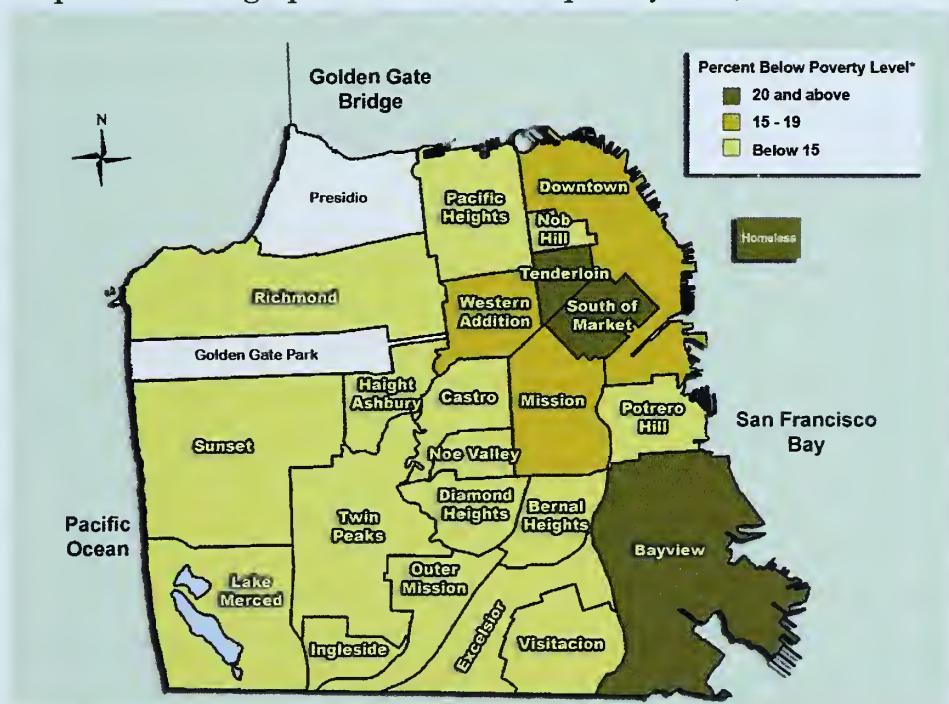
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Map 21.10 shows the differences in mean CVL in San Francisco. Ingleside, Excelsior, Diamond Heights, Bayview, and homeless individuals have the highest mean CVL, followed by the neighborhoods of Castro, Potrero Hill, and Tenderloin. Many of the neighborhoods with higher mean CVL are the poor neighborhoods in the city (Map 21.11).

Map 21.10 Geographic distribution of mean community viral load, December 2009, San Francisco



Map 21.11 Geographic distribution of poverty level, San Francisco



* Based on 2000 census data.

T

Technical Notes

HIV/AIDS Surveillance Methods

San Francisco HIV/AIDS cases are reported primarily through active surveillance activities in which public health personnel review laboratory and pathology reports and medical records to identify cases and complete the case report forms. HIV/AIDS cases are also identified through passive reporting, review of death certificates, validation studies using secondary data sources such as hospital billing records or other disease registries, and reports from other health departments. The surveillance system is evaluated regularly for completeness, timeliness, and accuracy.

Completeness of HIV and AIDS cases reporting in San Francisco is evaluated through a series of sensitivity studies conducted each year at various medical providers and facilities. Data on patients receiving care at the medical provider or facility are matched to the San Francisco HIV/AIDS registry and the completeness of case reporting is calculated. In 2010 sensitivity studies were conducted at various sites in San Francisco and we received data from three sources including: counseling and testing sites funded by the San Francisco Department of Public Health, San Francisco Department of Public Health medical setting sites, and Medical Monitoring Project sampled patients receiving care from January 2010 to April 2010. The completeness of HIV case reporting and AIDS case reporting was found to be greater than 99% for the three data sources.

Publications of our HIV/AIDS data include persons who were residents of San Francisco at the time they were diagnosed with HIV/AIDS. Our data also include San Francisco residents who were diagnosed in other jurisdictions.

HIV/AIDS Case Rates

Annual race-specific rates are calculated as the number of cases diagnosed for a particular racial/ethnic group during each year divided by the population for that race/ethnicity, multiplied by 100,000. These rates are calculated separately for males and females. The annual populations are not available for transgender persons. Population denominators for the years 2001-2010 are obtained from the State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000-2050 data files, May 2004 (www.dof.ca.gov).

AIDS Survival

Survival was calculated as the time between the date of initial AIDS diagnosis and the date of death. This includes persons with at least one low CD4 (count<200 or percent<14%) and persons diagnosed with AIDS opportunistic illnesses. The follow-up information of cases was obtained through retrospective and prospective reviews of laboratory records and medical charts. Dates of death were obtained through review of local death certificates, reports from the State Office of AIDS, and matches with the National Death

Index (NDI). The most recent NDI match included deaths that occurred through December 31, 2008. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 2008, whichever was more recent.

Causes of Death

Cause of death information on death certificates is coded using the International Classification of Diseases, 10th revision (ICD-10) for deaths occurring in 1999 or after, and the 9th revision (ICD-9) for deaths occurring prior to 1999. These codes are then processed and evaluated using a computerized system to determine the underlying and contributory causes of death (www.cdc.gov/nchs/about/major/dvs/im.htm). We obtained the ICD coded causes of death from the California multiple-cause-of-death computer tape for persons with AIDS who died prior to 1996. For AIDS deaths that occurred in 1996 and after, the cause of death information was obtained through matches with the National Death Index. Deaths attributable to HIV infection or AIDS are coded as 042-044 under ICD-9 and B20-B24 under ICD-10. In addition, the AIDS opportunistic illnesses, if listed on death certificates, are included in the category of 'HIV/AIDS' cause of death.

Opportunistic Illness Incidence

Annual incidence rates were calculated as the number of adults and adolescents who were diagnosed with the opportunistic illness of interest in a given year divided by the number of adults and adolescents living with AIDS during that year who were at risk of acquiring that opportunistic illness. We excluded cases diagnosed with that particular opportunistic illness prior to the start of that calendar year. Cases who were excluded from the analysis of one opportunistic illness might be included in the analysis of another opportunistic illness.

Grouping of Data Categories

Data regarding certain racial/ethnic or risk categories are grouped together when the number of persons with HIV/AIDS in that particular group is small and/or does not present significant trends. For example, "Other" in the Race/Ethnicity breakdown represents Asian/Pacific Islander, Native American and people of mixed race. Whenever possible, this report presents the expanded race/ethnicity categories rather than aggregating into the group "Other". The label "Other" in the Exposure Category breakdown may include transfusion recipients, hemophiliacs, heterosexuals, persons acquiring AIDS perinatally, or persons of unidentified risk.

Transgender Status

In September 1996, the San Francisco Department of Public Health began noting transgender status when this information is contained in the medical record. Transgender individuals are listed as either male-to-female or female-to-male. The majority of transgender HIV/AIDS cases are male-to-female (transfemale).

Due to the small number of transmale cases and potential small population size, their data are included with transfemale cases to protect confidentiality. Please note that there are several limitations of our transgender data. We believe that our report likely underestimated the number of transgender persons affected by HIV/AIDS because data collected for HIV/AIDS reporting are derived from the medical record. Consequently, information that may be discussed with the health care provider but not recorded in the medical record is generally not available for the purposes of HIV/AIDS case reporting.

Estimate of ART Use

Using surveillance data to estimate use of antiretroviral therapy (ART) will most likely result in an underestimate of the extent of its use. The underestimate occurs because use of ART is collected at the time a person with HIV infection is reported (which is often close to the time that they are diagnosed), a time at which many persons have not yet begun treatment. The San Francisco Department of Public Health collects follow-up information from selected health care facilities. For persons who receive care at these sites treatment data are likely to be more complete, because it allows us to capture the use of ART at some point following diagnosis after the date that the case report was completed. Follow-up information is also not available for persons who have moved away from San Francisco or who receive ongoing care outside of the city. Surveillance data provide information that indicates when a person was prescribed ART but does not provide information on adherence.

Estimate of Unmet Need

Care information was obtained from viral load and CD4 test results reported from laboratories and from medical record reviews, and supplemented by data provided from the California State Office of AIDS. A data file is provided by the California State Office of AIDS to supplement our local data for unmet need estimate. The data file contains unduplicated records for persons with HIV/AIDS in San Francisco who were documented as having received care during July 1, 2008 to June 30, 2009. This information was obtained from Medi-Cal, AIDS Drug Assistance Program (ADAP), Kaiser Permanente Northern California, AIDS Regional Information and Evaluation System (ARIES), and the State HIV/AIDS Reporting System (HARS) records. Because data sources beyond the San Francisco HIV/AIDS case registry are included in this data file, the total numbers of cases in Table 19.1 are larger than the numbers presented in other tables of this report. This is most likely a reflection of differences in the residence at the time of diagnosis and the residence at the time of receipt of care.

The total number of persons living with AIDS (PLWA), the total number of persons living with HIV non-AIDS (PLWH), the proportion of PLWA who did not receive care from a sample of chart reviews, and the number of PLWH who did not receive care were determined. The unmet need estimates did not include undiagnosed cases of HIV infection or infected individuals who are not aware of their infection.

D

Data Tables

Figure 1.1 AIDS cases, deaths, and prevalence, 1980-2010, San Francisco 3

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Cases	3	26	99	274	557	859	1,236	1,629	1,763	2,161
Deaths	0	8	32	111	273	534	807	877	1,038	1,275
Persons Living with AIDS	3	21	88	251	535	860	1,289	2,041	2,766	3,652

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Cases	2,046	2,285	2,328	2,073	1,787	1,563	1,081	805	695	576
Deaths	1,364	1,505	1,641	1,599	1,592	1,481	987	422	401	356
Persons Living with AIDS	4,334	5,114	5,801	6,275	6,470	6,552	6,646	7,029	7,323	7,543

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cases	556	514	497	562	480	474	440	449	414	314
Deaths	348	322	323	302	305	312	288	269	228	205
Persons Living with AIDS	7,751	7,943	8,117	8,377	8,552	8,714	8,866	9,046	9,232	9,341

	2010
Cases	247
Deaths	136
Persons Living with AIDS	9,452

Figure 2.1 Number of AIDS cases by race/ethnicity, 2001-2010, San Francisco . . . 8

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	295	293	284	261	274	245	261	215	163	118
African American	98	89	105	78	84	80	79	79	61	47
Latino	74	76	126	110	85	81	73	69	62	51
Other	47	39	47	31	31	34	36	51	28	31

Data Tables

Figure 2.2 Number of cases diagnosed with HIV infection by race/ethnicity, 2006-2010, San Francisco 8

	2006	2007	2008	2009	2010
White	296	279	249	230	201
African American	78	80	79	73	57
Latino	104	101	110	97	83
Other	42	66	54	60	58

Figure 2.3 Annual rates of male AIDS cases per 100,000 population by race/ethnicity, 2001-2010, San Francisco 9

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	148	147	143	129	138	121	128	103	77	54
African American	232	230	253	187	216	206	190	194	161	131
Latino	113	111	186	168	122	125	111	110	100	84
Other	33	25	34	20	19	23	26	31	18	20

Figure 2.4 Annual rates of male cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2010, San Francisco 9

	2006	2007	2008	2009	2010
White	141	132	119	110	94
African American	227	197	205	205	151
Latino	172	152	174	138	130
Other	28	44	37	41	39

Figure 2.5 Annual rates of female AIDS cases per 100,000 population by race/ethnicity, 2001-2010, San Francisco 10

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	9	8	4	7	5	5	5	7	4	4
African American	69	44	74	59	47	47	61	61	34	14
Latina	8	10	14	16	18	10	10	8	8	4
Other	3	3	2	1	4	2	1	5	1	2

Figure 2.6 Annual rates of female cases diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2010, San Francisco 10

	2006	2007	2008	2009	2010
White	11	9	8	5	6
African American	33	57	57	34	27
Latina	6	12	10	15	10
Other	3	3	3	1	3

Figure 2.7 Number of male AIDS cases by exposure category, 2001-2010, San Francisco 11

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
MSM	304	297	352	310	287	282	281	253	200	137
IDU	40	40	53	23	37	21	28	15	23	16
MSM IDU	86	93	76	75	85	78	73	74	40	51
Other	24	13	17	16	14	17	22	23	19	18

Figure 2.8 Number of male cases diagnosed with HIV infection by exposure category, 2006-2010, San Francisco 11

	2006	2007	2008	2009	2010
MSM	361	331	347	323	244
IDU	23	25	17	16	19
MSM IDU	66	66	42	50	54
Other	25	40	37	24	43

Figure 2.9 Number of female AIDS cases by exposure category, 2001-2010, San Francisco 12

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
IDU	30	24	25	29	21	20	14	20	14	6
Heterosexual	10	10	14	6	14	8	16	17	6	7
Other	5	2	1	4	2	2	2	3	3	2

Data Tables

Figure 2.10 Number of female cases diagnosed with HIV infection by exposure category, 2006-2010, San Francisco 12

	2006	2007	2008	2009	2010
IDU	19	14	14	10	10
Heterosexual	13	22	18	11	15
Other	4	7	7	7	4

Figure 5.2 Leading causes of death among San Francisco male residents aged 25-54 years, 2003-2008 29

	2003	2004	2005	2006	2007	2008
Accident	95	78	92	111	134	105
Non-AIDS cancer	89	84	79	76	80	73
Heart disease	107	75	82	83	78	57
HIV/AIDS	126	115	105	79	69	52
Suicide	57	44	41	48	55	48
Homicide	27	34	34	35	36	41
Liver disease	32	24	35	26	25	24
Mental disorder	47	59	58	49	26	22
Cerebrovascular	15	18	17	9	11	7
COPD	9	4	10	6	7	4

Figure 5.3 Leading causes of death among San Francisco female residents aged 25-54 years, 2003-2008 30

	2003	2004	2005	2006	2007	2008
Non-AIDS cancer	78	81	80	72	59	62
Accident	27	30	31	40	30	43
Heart disease	30	23	28	22	14	21
Suicide	14	13	11	11	12	10
HIV/AIDS	16	16	14	15	7	10
Mental disorder	16	8	23	13	7	9
Cerebrovascular	13	5	14	10	8	9
Liver disease	7	8	5	3	7	6
Homicide	4	2	4	5	8	5
COPD	6	7	3	1	4	2

Figure 5.4 Leading causes of death rates per 100,000 population among San Francisco male residents aged 25-54 years by race/ethnicity, 2008 31

	White	African American	Latino
HIV/AIDS	25	57	25
Heart disease	21	98	25
Non-AIDS cancer	26	90	9
Accident	43	187	53

Figure 5.5 Leading causes of death rates per 100,000 population among San Francisco male residents by age group, 2008 31

	0-29	30-39	40-49	50-59	60+
HIV/AIDS	0	6	45	38	21
Heart disease	2	8	30	145	888
Accident	17	31	49	101	101
Non-AIDS cancer	6	4	32	174	816
Homicide	31	12	20	11	4
Suicide	5	18	22	29	19

Figure 6.1 Incidence rates of opportunistic illnesses among adults and adolescents with AIDS, 1993-2008, San Francisco 34

	PCP	KS	Esophageal Candidiasis	Wasting Syndrome	MAC	CMV	Cytomegalovirus Retinitis	HIV Encephalopathy
1993	11.7%	6.4%	2.8%	4.9%	7.5%	3.2%	4.0%	3.0%
1994	10.1%	6.5%	2.8%	5.7%	6.7%	3.6%	3.5%	3.3%
1995	7.8%	5.7%	2.8%	6.8%	6.1%	3.4%	3.5%	2.9%
1996	5.3%	3.9%	2.2%	4.3%	3.2%	1.7%	2.1%	1.6%
1997	3.2%	1.9%	1.3%	2.1%	1.1%	1.0%	0.5%	0.8%
1998	2.9%	1.1%	0.8%	1.9%	0.9%	0.3%	0.6%	0.9%
1999	2.3%	0.9%	0.9%	1.7%	0.7%	0.4%	0.5%	0.8%
2000	2.6%	0.9%	1.1%	2.2%	0.5%	0.3%	0.4%	0.7%

Data Tables

	PCP	KS	Esophageal Candidiasis	Wasting Syndrome	MAC	CMV	Cytomegalovirus Retinitis	HIV Encephalopathy
2001	2.3%	0.9%	0.7%	1.8%	0.7%	0.3%	0.3%	0.5%
2002	1.6%	0.6%	0.7%	1.1%	0.5%	0.3%	0.2%	0.5%
2003	1.8%	0.8%	0.5%	0.9%	0.3%	0.2%	0.1%	0.4%
2004	1.5%	0.7%	0.5%	0.7%	0.3%	0.2%	0.1%	0.3%
2005	1.2%	0.6%	0.6%	0.6%	0.3%	0.3%	0.1%	0.2%
2006	1.0%	0.4%	0.6%	0.3%	0.3%	0.1%	0.2%	0.1%
2007	1.0%	0.4%	0.5%	0.3%	0.2%	0.2%	0.1%	0.2%
2008	0.8%	0.4%	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%

Figure 8.1 Trends in insurance status at time of initial HIV diagnosis by gender, 2006-2010, San Francisco 42

Male	2006	2007	2008	2009	2010
Public	13%	15%	22%	22%	28%
Private	49%	37%	41%	38%	32%
None	33%	39%	28%	22%	22%

Female	2006	2007	2008	2009	2010
Public	50%	60%	62%	50%	69%
Private	8%	12%	8%	11%	3%
None	39%	14%	26%	32%	14%

Transfemale	2006	2007	2008	2009	2010
Public	33%	29%	50%	68%	60%
Private	33%	14%	0%	0%	0%
None	33%	52%	30%	32%	20%

Figure 9.1 AIDS cases, deaths, and prevalence among MSM, 2001-2010, San Francisco 44

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cases	405	407	452	402	386	371	366	335	249	198
Deaths	249	250	231	234	235	228	216	179	174	106
Persons Living with AIDS	6,940	7,097	7,318	7,486	7,637	7,780	7,930	8,086	8,161	8,253

Figure 9.2 AIDS cases among MSM by race/ethnicity, 2001-2010, San Francisco . . . 45

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	260	261	255	242	242	226	235	193	141	104
African American	48	44	54	42	51	47	35	45	33	29
Latino	62	70	106	93	70	69	64	58	52	41
Other	35	32	37	25	23	29	32	39	23	24

Figure 9.3 Cases diagnosed with HIV infection among MSM by race/ethnicity, 2006-2010, San Francisco 45

	2006	2007	2008	2009	2010
White	260	244	215	205	170
African American	45	35	45	51	25
Latino	93	84	91	83	62
Other	36	55	48	53	49

Figure 9.6 Male rectal gonorrhea and male gonococcal proctitis among MSM by HIV serostatus, 2000-2010, San Francisco 47

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Male Rectal Gonorrhea (HIV+)	76	88	106	123	145	198	235	233	194	162	156
Male Rectal Gonorrhea (HIV-)	91	112	145	136	178	185	230	169	176	187	202
Male Gonococcal Proctitis (HIV+)	24	20	18	17	19	30	28	26	18	11	5
Male Gonococcal Proctitis (HIV-)	31	45	27	25	23	21	16	7	17	17	13

Figure 9.7 Early syphilis among MSM by HIV serostatus, 2000-2010, San Francisco . . . 48

HIV-Positive	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Primary	4	24	50	51	42	39	42	29	55	52	78
Secondary	13	46	131	143	134	90	87	77	124	115	137
Early Latent	7	25	111	110	110	109	106	86	141	143	167
HIV-Negative	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Primary	9	21	44	51	72	28	29	29	50	49	55
Secondary	13	24	51	68	67	48	43	39	55	65	59
Early Latent	3	9	33	47	52	45	36	40	45	51	56

Data Tables

Figure 10.1 AIDS cases, deaths, and prevalence among non-MSM IDU, 2001-2010, San Francisco 51

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cases	70	65	78	52	58	41	42	35	37	22
Deaths	60	58	60	59	62	47	45	37	22	17
Persons Living with AIDS	738	745	763	756	752	746	743	741	756	761

Figure 10.2 AIDS cases among non-MSM IDU by race/ethnicity, 2001-2010, San Francisco 52

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	28	24	26	15	27	14	16	14	14	9
African American	33	36	35	28	25	19	22	16	16	10
Latino	5	2	14	8	5	6	2	3	3	0
Other	4	3	3	1	1	2	2	2	4	3

Figure 10.3 Cases diagnosed with HIV infection among non-MSM IDU by race/ethnicity, 2006-2010, San Francisco 52

	2006	2007	2008	2009	2010
White	19	22	19	12	12
African American	17	14	9	8	15
Latino	4	2	2	4	1
Other	2	1	1	2	2

Figure 11.1 AIDS cases, deaths, and prevalence among heterosexuals, 2001-2010, San Francisco 54

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cases	19	16	23	14	19	20	33	27	16	15
Deaths	8	9	6	5	6	6	7	5	6	8
Persons Living with AIDS	159	166	183	192	205	219	245	267	277	284

Figure 11.2 AIDS cases among heterosexuals by race/ethnicity, 2001-2010, San Francisco 55

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	2	4	3	3	2	3	3	3	1	3
African American	11	6	14	3	5	9	21	11	8	3
Latino	3	3	3	5	8	6	7	4	7	7
Other	3	3	3	3	4	2	2	9	0	2

Figure 11.3 Cases diagnosed with HIV infection among heterosexuals by race/ethnicity, 2006-2010, San Francisco 55

	2006	2007	2008	2009	2010
White	9	6	6	3	6
African American	10	20	15	9	9
Latino	4	9	8	5	10
Other	2	7	3	1	4

Figure 12.1 AIDS cases, deaths, and prevalence among women, 2001-2010, San Francisco 58

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cases	45	36	40	39	37	30	32	40	23	15
Deaths	26	29	28	23	28	32	19	24	11	13
Persons Living with AIDS	449	456	468	484	493	491	504	520	532	534

Figure 12.2 Female AIDS cases by race/ethnicity, 2001-2010, San Francisco. 59

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White	15	13	7	11	9	8	8	11	7	6
African American	22	14	23	18	14	14	18	18	10	4
Latina	4	5	7	8	9	5	5	4	4	2
Other	4	4	3	2	5	3	1	7	2	3

Data Tables

Figure 12.3 Female cases diagnosed with HIV infection by race/ethnicity, 2006-2010, San Francisco 59

	2006	2007	2008	2009	2010
White	19	15	13	8	11
African American	10	17	17	10	8
Latina	3	6	5	8	5
Other	4	5	4	2	5

Figure 16.1 AIDS cases, deaths, and prevalence among transgender persons, 2001-2010, San Francisco 65

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cases	15	18	24	17	14	12	13	9	9	10
Deaths	15	9	9	12	11	12	14	12	6	8
Persons Living with AIDS	164	173	188	193	196	196	195	192	195	197

Figure 19.1 Minimum, most recent, maximum community viral load and newly diagnosed HIV cases, 2004-2009, San Francisco 72

	2004	2005	2006	2007	2008	2009
Minimum CVL (p=0.003)	15,298	14,390	12,673	8,934	8,848	7,924
Most recent CVL (p<0.001)	22,435	21,205	19,172	13,960	12,969	10,660
Maximum CVL (p=0.01)	39,903	37,833	33,969	22,802	27,936	19,076
Newly Diagnosed HIV Cases (p<0.001)	864	737	590	588	540	506

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